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Architecture for Scalable, Self-human-centric, Intelligent, Secure, and Tactile next generation IoT

assist-iot

D2.11 – Open Call Report v1

Deliverable No.	D2.11	**Due Date**	30-JUN-2022
Type	Report	**Dissemination Level**	Public (PU)
Version	0.1	**WP**	WP2
Description	Complete report of all procedural/formal aspects of the first round of Open Calls.		

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2-May-2022	0.1	Table of Contents shared with the partners of WP2
18-Jun-2022	0.2	Version with most content included
15-Jul-2022	0.9	Version sent to IR
22-Jul-2022	1.0	Version submitted – 1 week of delay due to mid-term review and 2 weeks of delay (on purpose) to insert the conclusions of the first review (M1) of all projects awarded in OC#1

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Executive Summary

The Open Call Report v1 is written within the context of WP2 – Project Coordination and Management of **ASSIST-IoT** project, under Grant Agreement No. 957258.

This document aims at explaining the procedure followed by ASSIST-IoT Consortium to define, publish, communicate, accept, evaluate, award and track the performance of the first round of Open Calls in the project.

The deliverable evidences the work performed to achieve a successful evaluation of 37 proposals that applied, by February 2022, to the Financial Support for Third Parties (FSTP) overseen by ASSIST-IoT. A drilled down set of statistics about country of origin, type of company and targeted sector is provided. Out of those 37, 7 were awarded (18,9%), focusing on pilot 1 (2), pilot 2 (2) and pilot 3A of ASSIST-IoT (pilot 3B was not covered by any awarded proposal).

The deliverable also reports on the specific communication actions performed to maximise the outreach of the opportunity, alongside the collaboration with EU-IoT to make it possible.

Table of contents

List of tables

List of figures

1. About this document

The main objective of this document is to report about the Open Call publication, evaluation and execution procedure. This document focuses on the preparation and evaluation of the first round (out of two) of Open Calls in ASSIST-IoT. By the time of closing this document, awarded proposals have concluded their first reporting period (after M1 of execution).

1.1. Deliverable context

Table 1. Deliverable context

Item	Description
Objectives	**O1.** Open Call winners (projects) will help validate ASSIST-IoT's NGIoT reference architecture. **O6**. Every Open Call project will provide added value to one of ASSIST-IoT's pilots, thus enhacing their scope and bringing real-life application beyond their objectives.
Exploitable results	N/A
Work plan	This deliverable is the first tangible documentation result of task T2.6.
Milestones	N/A
Deliverables	This deliverable does not have a relation with any other previous document. It will be continued in D2.12, where the second round of OC projects (and corresponding evaluation process) will be reported.
Risks	**Open Call Winners reliability**: This risk considers the adverse event of awardees ending up not being reliable as: (i) to complete their committed works, (ii) to carry out the expenditures of the budget, (iii) to justify their work, (iv) to achieve proper successful communication with ASSIST-IoT Coordination or with partners. This document reflects actions put in place to prevent this event from happening (e.g., pre-screening of proposals, Collaboration Agreement signature).
	Open Call Integration: Open Call winners integration require too much adaptation effort, having to re-design some enablers or to deliver ad-hoc technology, APIs. This risk is more related with task T7.4, however this document contributes to the minimisation of its likelihood, as the periodic reporting and evaluation of Open Calls allows to act in advance in case of deviations (that are informed via those reports).

1.2. The rationale behind the structure

The content of the deliverable is organized in six main sections:

- **Section 2** introduces ASSIST-IoT Open Calls, their goals and the global framework of funding and participation in the project.
- **Section 3** elaborates over the global methodology and evaluation procedure of the Open Calls. This section will only be explained in this deliverable, as it is common for the first and the second round of Open Calls funding.
- **Section 4** describes the particularities of the first round of Open Calls: results, specific conditions and challenges, proposals presented and awarded evaluation notes and generated material.
- **Section 5** reflects on a series of lessons learned that will serve for improving the process towards the 2nd round of Open Calls.
- Finally, **section 6** concludes the document analysing steps ahead.

2. Introduction to ASSIST-IoT Open Calls

2.1. Presentation and goals

ASSIST-IoT has reserved a total of 900.000 € for supporting third parties enhance the scope of the project by joining the project via Open Calls. ASSIST-IoT will perform **two rounds of Open Calls** where research entities and SMEs around Europe are summoned to:

- Validate and improve technical components of the architecture.
- Take up of ASSIST-IoT by application developers, domain experts and entrepreneurs to create new applications and services.
- Push ASSIST-IoT technology and service visibility on the market.
- Support an innovative, dynamic and industry open ecosystem around ASSIST-IoT results.
- Gather new market relevant inputs ASSIST-IoT components and finding industry experts to improve technical capabilities as well as filling possible missing functions, needed adoptions or modifications.

Both Open Call rounds will aim at funding **innovative proposals** that will **enhance ASSIST-IoT**'s objectives **framed** (mandatorily) **within one** (out of its three) **pilot**(s). In particular, Open Call proposals are expected to address **one specific challenge out of a list** of possible challenges formulated by each pilot.

2.2. Global challenges

The global challenges that Open Call applicants can tackle are:

- Design, implementation and integration of interoperable device layer components, based on different low-level communication standards or on ad-hoc proprietary device solutions.
- Design, implementation and integration of interoperable networking layer components, based on different standards higher-level communication standards or on ad-hoc proprietary networking solutions to be tested in ASSIST-IoT pilots.
- Design, implementation and integration of interoperable middleware layer components. These need to deal with the different middleware services such as discovery, management, querying, coordination and interaction.
- Design, implementation and integration of interoperable application service components. These should exploit major standards and be integrated with ASSIST-IoT API.
- Design, implementation and integration of interoperable data and semantics components. Specifically, semantics layer components have to deal with heterogeneous IoT ontology matching.
- Design, implementation and integration of virtualization mechanism for smart objects, including context aware mechanisms and transfer of virtual objects between servers and cloud platforms.
- Design, implementation and integration of fog/edge/cloud support mechanisms, including support for different services, inter cloud mechanisms applied to IoT and support for virtualization.

Design, implementation and integration of AI/ML libraries and tools addressing ASSIST-IoT pilots

However, in both rounds, specific challenges per pilot will be defined, constraining the previous to be framed within challenges:

Table 2. Global challenges of Open Calls

P[X]C#	IoT devices integration	Integration of new IoT devices to bring value to ASSIST-IoT pilot scenarios.
P[X]C*	Global	Others fitting within the bullet points above.

2.3. Communication strategy

All the process around Open Call launching, announcement, webinars, results, etc. has been accompanied by a communication strategy. This has consisted of instructions, materials and periodic actions aiming at maximising the outreach of the Open Call to attract more applicants, thus optimising the outcome of this activity. The next figure represents the temporal approach designed for OC#1 that will be replicated for OC#2:

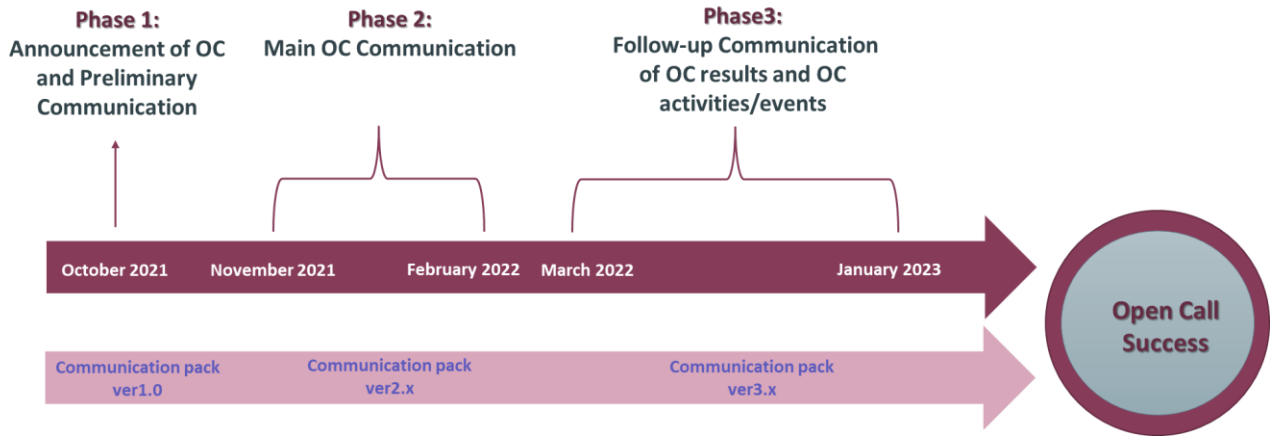


Figure 1. Communication strategy along OC#1 process

The following items summarise the strategy that has been designed:

- Leverage the social media accounts of the project to publicize the OC opportunity via creating ad-hoc material:
  - Open Call Announcement on ASSIST-IoT website (News webpage post)
  - Introductory posts through ASSIST-IoT social media channels (Targeting Nov 1st)
  - Use of dedicated hashtags related to ASSIST-IoT Open Call e.g. #ASSISTIoTOpenCall
  - Use of mentions (@) referring to associations and rest of ICT-56 projects
  - Creation of custom (easy to recognize) images related to ASSIST-IoT Open Call
  - Creation of slideshow video presentation (promoted through ASSIST-IoT YouTube channel)
  - Creation of dedicated OC menu and webpage in ASSIST-IoT website with links and related material
  - Use of link jar (https://linkjar.co/) in order to have more links available in Instagram bio
  - Creation of a dedicated mail address to answer questions and provide support about OC (oc@assist-iot.eu)
- Close connection and collaboration with EU-IoT (see Section 3.1)
- Relying on ASSIST-IoT partners time devotion:
  - Dedicated folder and material per Communication Pack/Phase.
  - Circulating through their networks
  - Collaboration in the improvement of website (sections of pilots – better described) and the fine-tuning of the challenges.
  - Better describing the technical architecture of the project so that Open Call applicants could better grasp validation and testing approaches.
- Periodic campaigns with specific information:
  - Open Call information on ASSIST-IoT website and News section
  - Creation of mailing lists gathering contacts from several networks
  - Articles/Press Releases and OC events

- Webinars for explaining the opportunity, details of the Open Call, etc.
- P2P teleconferences with potential applicants to offer Q&A service.

The team concluded that the communication strategy has achieved its objectives during the first iteration (OC#1) and it will also be applied to the next round (OC#2).

The actions above were channelled through the following communication means, that are either directly connected to the project (partners, social media accounts, website…) or that have been leveraged thanks to indirect activities by the partners (networks, SMEs, EU-IoT…):

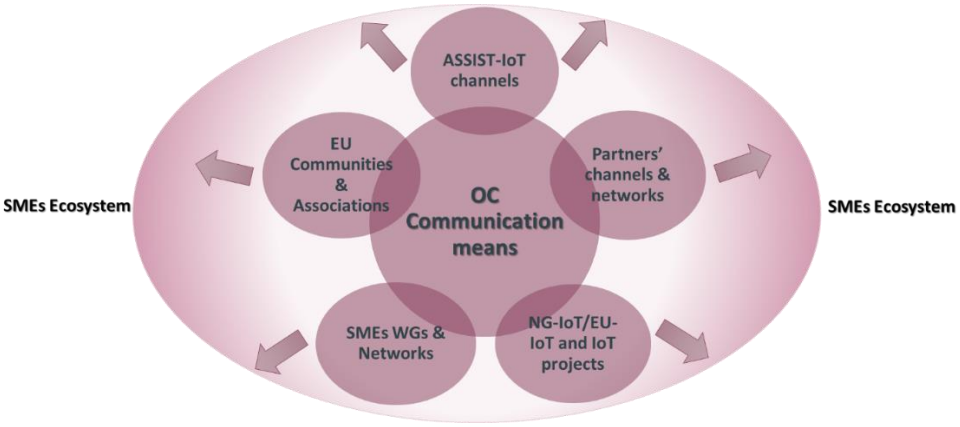


Figure 2. Open Call communication means and channels

2.4. Supporting tools

In order to conduct the whole process, five main tools have been utilised:

- A customised deployment of OpenConf[1]. Based on this open source system, the technical team of T2.6 performed a series of modification over the PHP server code and the SQL databases to adjust the solution to fit ASSIST-IoT Open Call nuances.
- Microsoft Teams to host P2P meetings with potential applicants, to perform consensus meetings and to debate internally (ASSIST-IoT team) about ESR, eligibility checks, etc.
- ASSIST-IoT website (Wordpress) and social media (namely Facebook, Twitter, Instagram) to publicise and provide information about the OC opportunity.
- JotForm: to allow OC applicants to register their proposals, providing information about title, duration, abstract, etc. It also includes enough information about ethical and legal disclaimers.
- Mailing lists: main communication channel with actual applicants, evaluators, observer and in general for interfacing ASSIST-IoT with OC candidates.

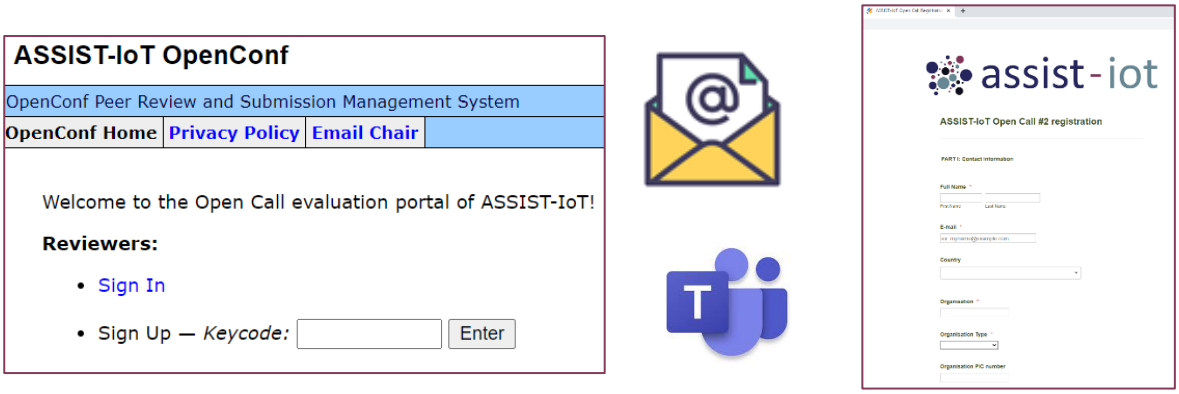


Figure 3. Supporting tools for managing ASSIST-IoT Open Calls

[1] https://www.openconf.com/

2.5. Formal participation

2.5.1. Applicability and eligibility criteria

Only the following **type of entities** will be able to submit proposals:

- European SMEs
- Universities
- Research centres (RTOs)

Operational eligibility criteria for proposals will also be:

- Only one entity per proposal will be admitted, so activities in co-operation will not be considered eligible (no Consortia allowed).
- Proposals must contribute to the ASSIST-IoT paradigm.
- The proposal must be contextualised to one of the three pilots
- The proposal must directly tackle one of the challenges within one of the pilots
- It is not necessary that the applicants are located in any of the pilot sites (Malta, Warsaw - Poland, Valencia - Spain, Germany).

Administrative (and other) **criteria** are as follows:

- Proposals must be written in English in all their parts in order to be eligible.
- The applicants must base their proposals on original work and, going forward, any foreseen developments should be free from third party rights, or they are clearly stated in a specific section (Previous IP background – see Section 7 of Proposal Template).
- Applicants are not allowed to submit multiple applications. If that is the case, only the first submitted application will be considered.
- No entity with economic interest, family or emotional ties or any other shared interest ('conflict of interest') towards ASSIST-IoT Consortium partners will be accepted as candidates for funding.
- All cases of conflict of interest will be assessed case-by-case, based on pertinent EU stipulations.

2.5.2. Funding

For the **first round** of ASSIST-IoT Open Calls, a **budget of 420k€ is available** considering the following:

- A maximum of 7 proposals will be funded.
- A maximum requested amount of **60.000€ per proposal** might be accepted.
- Maximum duration of projects is **9 months**.

For the **second round** of ASSIST-IoT Open Calls, a **budget of 480k€ is available** considering the following:

- A maximum of 8 proposals will be funded.
- A maximum requested amount of **60.000€ per proposal** might be accepted.
- Maximum duration of projects is **9 months**.

The form of financial support to be used will be a **pre-defined lump sum**. Funds will be provided to the third parties following the accomplishment of different milestones verified on the basis on the presentation of technical and financial reports. Payments will be: (i) pre-financing, (ii) one interim payment according to the results of monitoring actions, (iii) final payment.

In the lump-sum to be requested, the costs will be **eligible** ('eligible costs'). In addition, to be eligible the costs must meet the following criteria:

i. they must be incurred in the period set out in Article 9.4 of the Collaboration Agreement (see Application Package), with the exception of costs relating to the submission of the technical report and financial statement (see Article 9 of the Collaboration Agreement);

ii. they must be identifiable and verifiable, in particular recorded in the applicant's accounts in accordance with the accounting standards applicable in the country where the applicant is established and with applicant's usual cost accounting practices;

iii. they must comply with the applicable national law on taxes, labour and social security, and

iv. they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency;

In contrast, the following will be considered **ineligible costs**:

i. costs that do not comply with the conditions set out above (see Article 7.1 of the Collaboration Agreement)

ii. costs reimbursed under another EU or Euratom grant (including grants awarded by a Member State and financed by the EU or Euratom budget and grants awarded by bodies other than the European Commission for the purpose of implementing the EU and Euratom budget).

3. Global methodology and submission procedure

3.1. Preparation and collaboration with EU-IoT

During the whole process of the Open Call, ASSIST-IoT has closely collaborated (and plans to keep doing so for the 2nd iteration) with EU-IoT and other agents involved in NGIoT ("network of networks"). In particular, the collaboration has been framed within the next actions:

1. Communication, through the Communications Task Force organised by EU-IoT (CTF):
    - Announcement via NGoT website (News, Newsletters,Newsflashes and a dedicated entry)
    - Mentioning ASSIST-IoT Open Call in several NGIoT/EU-IoT related online events
2. Special task force created by EU-IoT to liaise projects with regards to Open Calls:
    a. This board, composed of representatives of all ICT-56 projects that host Open Calls, meets regularly once per month to share advances on the Open Call timing and status of those projects. In addition, EU-IoT, as a catalyst for the innovation and supporter of such actions, offered help in different areas. Concretely the outcomes obtained by ASSIST-IoT for participating in this task force were the following:
        - Suggestions on potential evaluators (external experts) in the form of a pool to which all projects and EU-IoT contributed to enlarge.
        - Discussion on mechanisms and tools for conducting the Open Calls (due to present or past experiences). E.g., whether or not allow several applications per entity, last minute acceptance of submissions, management of missing information, organizing explanatory sessions…
        - Fruitful debates on the most appropriate timing for opening the submission period, closing applications, extending deadlines, when to start recruiting evaluators, etc.
        - Results of each project's Open Call were announced as soon as they were available. Number of applications received and statistics on origin, sector, type of company, business field, etc. are helping to shape the communication strategy of all projects and EU-IoT's as a whole.
        - Each session provides a considerable number of lessons learned, by any of the projects, out of the moment of the Open Call they are currently involved.

3.2. Proposals preparation

Applicants must prepare a written proposal with a maximum of **15 evaluable pages** (cover and last page excluded) following the template included in the Application Package. Evaluators will be instructed to disregard any excess pages above the 15-page limit. The minimum allowed font size is 10 and the format provided in the template must be respected, included same page margins. The content must include (minimum, but not limited to) the following information:

1. **Administrative Information** (same as in the form indicated in **¡Error! No se encuentra el origen de la referencia.**).
2. **Idea**
    a. Main idea of the project and how it is related with the specific challenge of the selected pilot.
    b. Innovation (how the project goes beyond already existing solutions)
    c. Technology underlying the project, providing enough block diagrams and illustrative pictures to understand the process and how it will work interacting with ASSIST-IoT.
    d. Observable and tangible results (application, GUI, software, hardware, protocol, methodology).
    e. Background of the solution (where it comes from, software it builds atop, etc.).
3. **Relevance to ASSIST-IoT**
    a. How the idea matches ASSIST-IoT overarching goals (https://assist-iot.eu/objectives/)
    b. How the solution will contribute to enhance the scope of the selected pilot. (https://assist-iot.eu/use-cases)
    c. How it will enhance (and which part of) the architecture of ASSIST-IoT.
4. **Impact and sustainability**
    a. Which is the expected impact of the solution during ASSIST-IoT project?
    b. Which are the mid- and long- term indicators that could be monitored to measure the impact of your solution? Attempt to quantify such estimated impact.
    c. How will you ensure the sustainability of the work beyond the end of the funding? Please indicate any additional sources of funding/support you may need and how you plan to secure it
    d. Explain every expected publication (scientific paper, congress article, etc.).
    e. Standardisation and roll-out potential
5. **Implementation**
    a. Gantt of the project (Note that the max. duration for OC#1 and OC#2 is 9 months).
    b. Explanation of the work plan (divided in tasks) as detailed as possible.
    c. Describe the necessary means to realise the idea (data, equipment, connectivity, access to infrastructure, systems, etc.).
    d. Milestones (max.4) and deliverables (max. 8 including reports and other – e.g., software).
        * Here, it is worth mentioning that deliverables and milestones should be aligned with the planned "payment milestones", according to the Collaboration Agreement to be signed.
6. **Team**
    a. List the relevant members of your team, indicating gender (voluntarily), their relevant skills and experience.
    b. Indicate the structure of the team and the roles and responsibilities that each member will be taking.
    c. Experience of the organisation (relevant previous projects, services, contracts, etc.).
7. **Other relevant aspects**
    a. Which (if any) data do you intend to gather or produce? How much of this will be openly available?

b. Do you rely on personal data? If so, how will you store this data? All pilots will be expected to comply with the General Data Protection Regulation 2016/679 (GDPR).
c. Mention any IPR background existing.

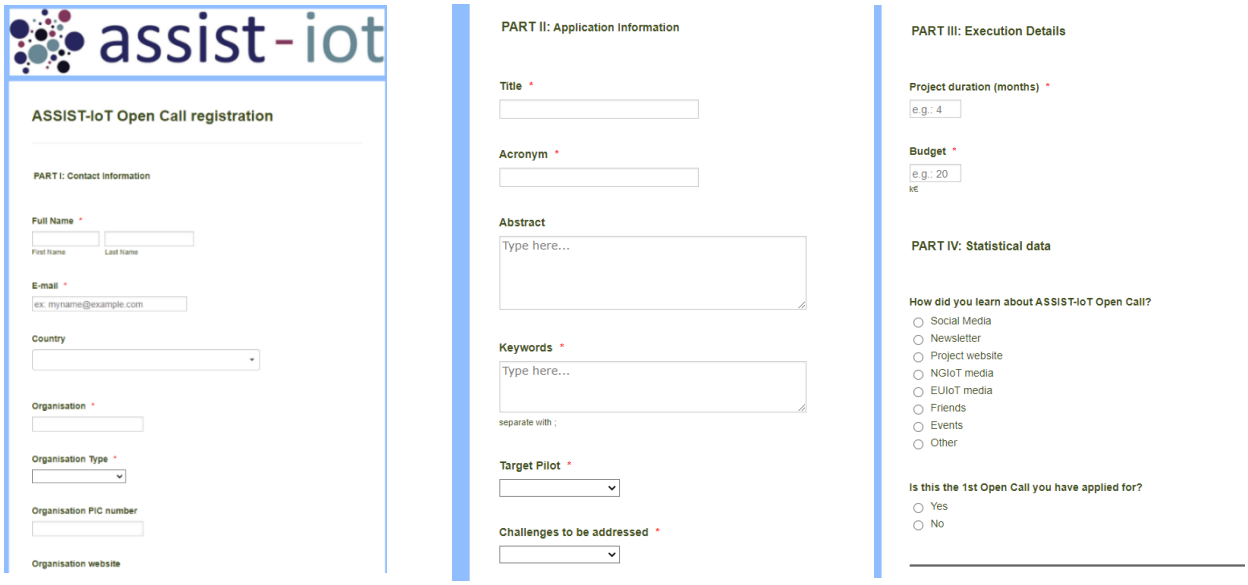
The template of the proposal that has been made available for applicants (through ASSIST-IoT website) has been enclosed in this document as an appendix (Appendix A -).

3.3. Submission

The submission of proposals is managed through a dual-channel procedure after proper registry per applicant. The procedure is divided in three steps that are explained here below:

(1) The applicant must fulfil an online form with data relative to the proposal. The form is divided in three parts, containing both mandatory and non-mandatory fields:
   i. PART I: Data about the applicant: entity name, entity type, person registering the application, PIC of the entity, country and website.
   ii. PART-II: Key information of the proposal: name, acronym, abstract, keywords, pilot and challenge targeted.
   iii. PART –III. – Execution details, including duration and budget requested for the proposal.
   iv. PART – IV: Statistical data.

The form complies with all GDPR and ethical provisions as well as with ASSIST-IoT procedures defined in deliverable D2.3. Informed consent and other legal details to ensure compliance with applicable regulations are included, designed in a secure way and including contact emails for addressing with any concern.



(2) Before submitting the form, the applicant must elaborate and attach a written proposal (**in PDF format**) according to the template and instructions set out in Appendix A - . Once done, the first two steps of the registration will be complete.
(3) To finalise the application, the applicant must send via email the proposal (same PDF file uploaded through the) form to opencall-assist-iot-eu@assist-iot.eu and to ASSIST-IoT OC organisers as a password-protected ZIP file including all relevant material. Applicants should also include a copy of the form as a proof-of-registration (confirmation received after form submission) also in PDF.
   i. An acknowledge of receipt will be sent back to the submitter within 5 days after submission.

The application for OC#1 was open and available to receive proposals from **November, 1st, 2021** to **February 28th, 2022, 5 p.m. CET**.

The application for OC#2 was open and available to receive proposals from **July, 1st, 2022** to **October 14th, 2022, 5 p.m. CET**.

3.4. Evaluation procedure

The procedure evaluation to be followed in ASSIST-IoT Open Call funding is as follows. According to the schema in Figure 4, a clear flow must be followed. This flow is composed of several steps aiming at ensuring that the evaluation is performed thoroughly and in the correct order.

Before drilling down the procedure, it is worth to highlight which are the intervening actors:

- **ASSIST-IoT Team**: The team participating in task T2.6. The task is led by UPV, who has coordinated this team to perform the Minimum Quality Criteria Check. In other words, several people of ASSIST-IoT, participating in the design of the Open Call (challenges, scope, goals, steps, etc.) make a first analysis of the proposals to ensure eligibility.
- **Evaluators**: External experts on related ASSIST-IoT fields (IoT, AI, edge computing, data science, sustainability, new technical solutions applied to various sectors) with enough capacity and background for performing the evaluation of proposals submitted to ASSIST-IoT OC.
- **Observer**: An external person with no conflict of interest on the process that has the purpose of guaranteeing impartiality and cleanliness in the evaluation. To be present in evaluations, communications and informed on every decision taken.
- **ASSIST-IoT OC Committee:** A judiciously selected team composed of several members of ASSIST-IoT. The goal of this committee is to act on behalf of the whole Consortium in different phases of the evaluation, especially in the final board to drill down the awarded proposals out of the ranking of finalists. The selected group was as follows:
    - Project Coordinator, T2.6 leader (managerial validation)
    - Technical Coordinator (overall technical validation)
    - T7.4 leader (OC integrator – technical perspective)
    - WP3 leader (perspective of Use-cases)

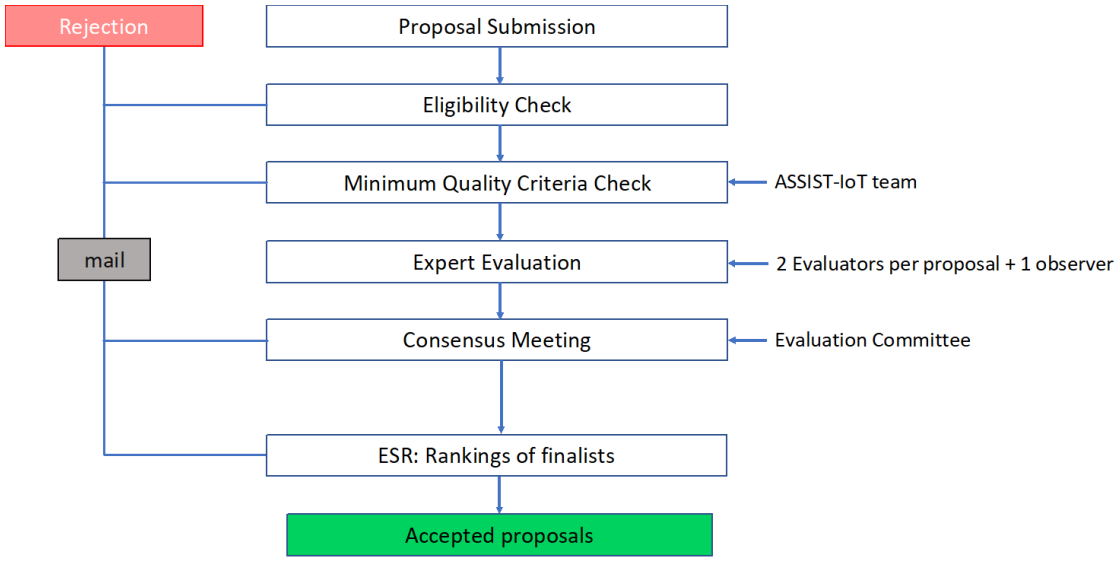


Figure 4. ASSIST-IoT Open Call Evaluation procedure flow

In order to explain each step of the procedure, a series of questions are posed and answered in each sub-section. This evaluation procedure has been conducted for round #1 and will be replicated (changing dates and with possible slight differences on the timing) for round #2.

3.4.1.Eligibility Check

What?

Without analysing the content, this action focuses on checking the fulfilled forms, length of the proposal, language in which it is written, applicant company type, etc. If any proposals did not meet the established criteria (see 2.5), those were casted aside.

The proposals must meet the following criteria:

i. Admin data available: Email, company, fields properly fulfilled (from the online form).
ii. Type of entity: SME, University or RTO.
iii. Length of proposal: Max. 15 pages
iv. One topic selected: Corresponding to a valid challenge of one pilot (only one topic).
v. Budget: 60k€
vi. Content: All sections fulfilled, all documentation available.
vii. Admin criteria: Only one entity, no Consortia, meeting the rest of requirements.

How?

As soon as all the proposals are received, they are uploaded to a specific space of ASSIST-IoT's online documentation repository on which only assigned people (ASSIST-IoT OC Committee) have access.

By whom?

ASSIST-IoT OC Committee

For how long?

2 days

What are the results?

Proposals are either ready to be uploaded to the management software (OpenConf) or are dismissed (if they do not meet indicated criteria). For OC#1, no proposals were left out in during this step.

What comes next?

Then, the proposals that have met the criteria are ready to be inserted in the tool in which they will live during the rest of the evaluation procedure.

3.4.2.Uploading of proposals

What?

Upload of the proposals that must go through evaluation procedure.

How?

Using the OpenConf chair role, the ASSIST-IoT T2.6 lead team (UPV) proceeds with the upload. This is done to guarantee proper usage of the system, avoiding last minute problems that could happen if automatic submission would have been allowed.

Whenever uploading the proposals, an identifier number (unique) is automatically assigned to each proposal.

By whom?

ASSIST-IoT T2.6 leading team.

For how long?

1 day

What are the results?

Proposals are uploaded to the system, listed and available to be consulted by the different profiles with enough access permissions. Some screenshots of the process are provided below:

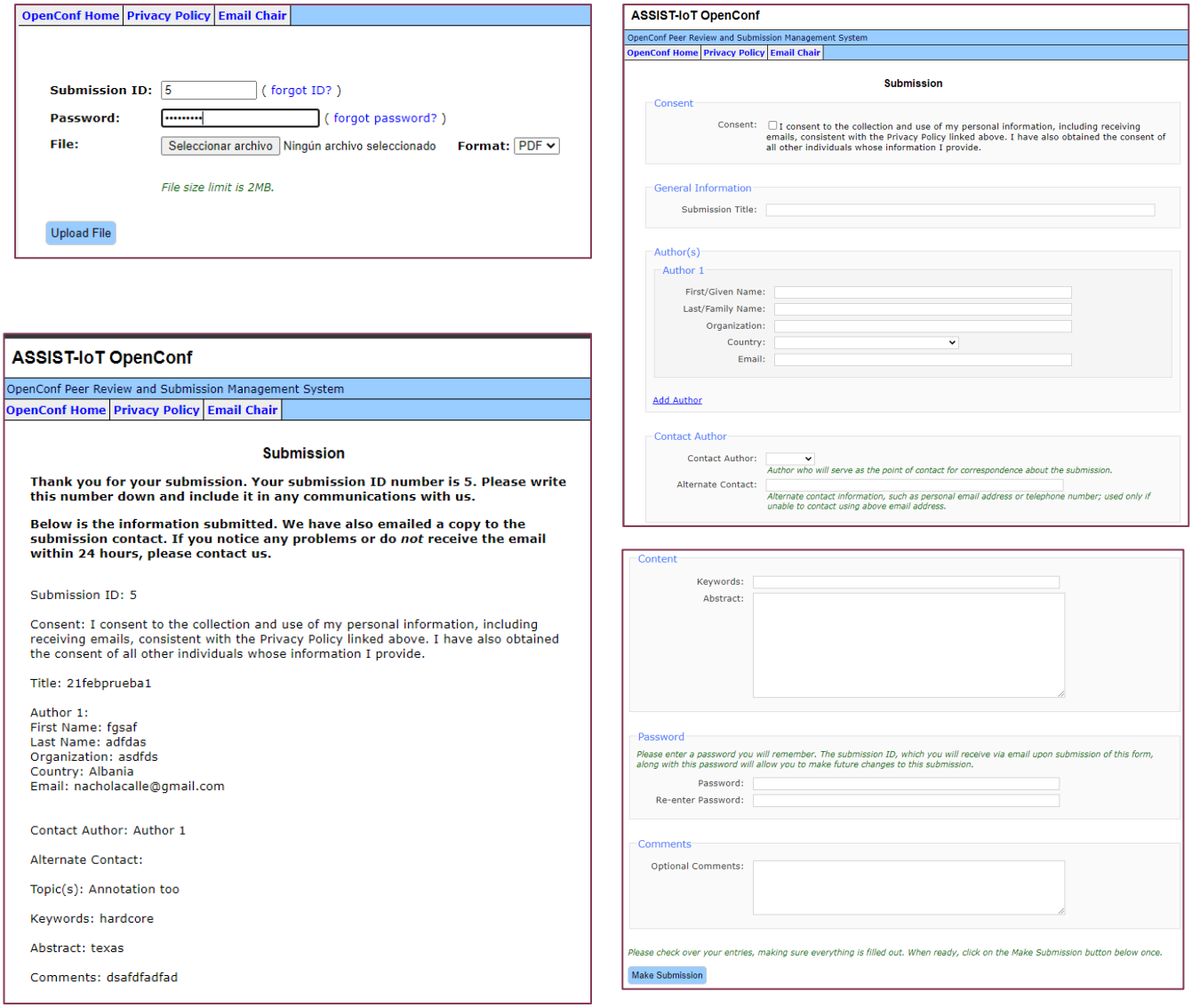


Figure 5. Screenshots of the step upload of proposals to the management software

What comes next?

The next step would be to allow access to the external evaluators, make the assignment to proposals and wait for their individual reports. However, first ASSIST-IoT team made sure that the proposals complied with the basic acceptance principles and then, recruitment of experts should allow the former to happen.

3.4.1. Minimum Quality Criteria Check (MQCC) and proposals update

What?

Analysing that, beyond the pure administrative criteria, the proposals meet the operational requirements set out during the preparation phase:

- Every proposal must provide added value to one of ASSIST-IoT pilots.
- Every proposal must validate (the whole or at least a part of) ASSIST-IoT's architecture.
- Every proposal must be able to be (somehow) integrated with ASSIST-IoT technology.

How?

By checking (over the online tool) all proposals, reading them carefully and deciding whether or not those describe enough the operational criteria.

By whom?

ASSIST-IoT OC Committee

For how long?

3 days

What are the results?

If a proposal does not meet the propose operational requirements, it is indicated as withdrawn in the online software. This is done in order to keep a proper registry within the statistics of the system:

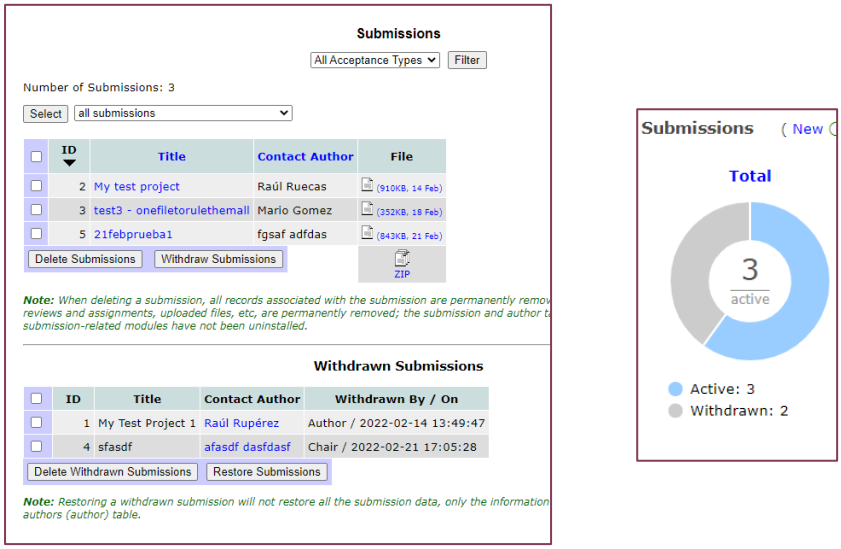


Figure 6. Screenshot example of the withdrawn option in the software system for dismissing OC proposals

What comes next?

At this moment, only valid proposals are alive in the system. Now the evaluators must come in and perform their work.

3.4.2. Evaluators recruitment and offline proposals assignment

What?

This step reflects the works for selecting external experts to evaluate the proposals. According to the committed procedure since GA stage, each individual proposal received must undergo an evaluation by two independent evaluators who had declared no conflict of interest. It also explains how the assignment per proposal is performed and provides numbers about OC#1 results of this step.

How?

Via partners' networks, former experiences' contacts and EU-IoT support, ASSIST-IoT reach a number of external experts with no conflict of interest to perform the evaluation of proposals. Same for the seek of an observer, which was strongly based on previous occasions where OC Coordinator (UPV) performed this action (in other projects such as INTER-IoT).

The experts are contacted, exposed the conditions (fees, timing, requirements, duties). The total number of experts to be selected depends hugely on the number of proposals received. For the first round, 37 proposals were submitted and advanced to the evaluation stage. Considering that every proposal requires 2 separate evaluations, 74 reviews must be done. Assuming an acceptable workload of evaluating 1 proposal per week, 8 or 9 evaluators would be needed.

The criteria for selecting the evaluators are the following:

- Seeking gender balance
- Seeking country origin balance
- Varied expertise
- Knowledge on EC-funded actions and procedures
- No conflict of interest with the project nor with any proposal

Once this is done, an assignment exercise is to be performed. The criteria to consider to make the assignments expert-proposals are the following:

- Evaluator from a different country to the proposer (as much as possible)
- Avoiding repetition of the same couple of evaluators for many proposals.
- Alignment with outstanding field of expertise.

By whom?

ASSIST-IoT partners, coordinated by T2.6 leader (UPV).

For how long?

2 weeks

What are the results?

Several external experts are recruited (enough administrative binding documents settled) and proposals are assign to them for review.

What comes next?

After the recruitment, the evaluators:

a) Were introduced in the system with the role of "Evaluators". The selected external observer to guarantee impartiality was introduced in the system as "Observer".
b) Were instructed on how to perform their evaluations, both:
    a. In spirit: how to evaluate the proposals by the content, the alignment with ASSIST-IoT architecture and the
    b. In practical terms: how to use the tool and introduce their evaluations.
    c. What would come next: consensus and reports instructions.

3.4.3.Assignment of reviewers in the software

What?

Translating the conclusions of the previous step into the evaluation management software (OpenConf).

How?

From this point on, evaluators would have access to the platform and would perform all the changes alone. In order to instruct them on how to proceed, a teleconference was organised and lectured by T2.6 leader indicating the procedure.

This step consists of registering the evaluators (themselves, via register link and password setting feature) and, once done, appoint them to the decided proposals.

By whom?

T2.6 leader (UPV)

For how long?

1 day

What are the results?

From this point on, they would have access to those proposal to insert their evaluations.

Figure 7. Reviewers assignment OC

What comes next?

Once assigned and having access, the next step is for them to perform the evaluation of their assigned proposals.

3.4.4.Evaluation by external experts

What?

Evaluation of the proposals.

How?

Using a customised form within the software (see Appendix B - evaluators should read, understand evaluate and introduce their comments upon each assigned proposals. In particular, they must evaluate with a mark (1 to 5, being 5 the highest evaluation) each of the relevant traits of a proposal: (i) Relevance for ASSIST-IoT, (ii) Impact, (iii) Technical excellence, (iv) Quality of the implementation and (v) Quality of the team.

By whom?

External Evaluators

For how long?

9 weeks (2 months and 1 week)

What are the results?

All proposals have 2 evaluations fulfilled, from both assigned evaluators. They have two marks between 0 and 25.

What comes next?

As the two marks of each proposal would probably differ, a consensus meeting must take place so that both reviewers agree on a single evaluation.

3.4.5.Consensus meetings, reports and final score

What?

To assign a single score to each proposal, the two evaluators must discuss and reach agreements.

How?

The evaluators met in teleconferences or discussed via email threads an agreed score per-section basis. The goal is to have a single score (e.g., 3) per each “category of evaluation”. This score might be the average of both evaluators, or otherwise. No half points were allowed. Once agreed, one of the two evaluators communicated the result to the OC Coordination team and delivered a consensus report. This report contains information on

why one score was assigned instead of other, or even includes potential disagreements discussed by the evaluators.

By whom?

External Evaluators

For how long?

2 weeks

What are the results?

- A ranked list of proposals with marks between 0 and 25.
- Each proposal has at this point:
  - 2 separate evaluations (1 per assigned reviewer) with 2 different marks
  - A consensus report, indicating the reasons why they have each single score per trait.
  - A single, final mark.

What comes next?

Once the proposals have their final evaluation, now the decision on which of those should be awarded must take place.

3.4.6.ESR and ranking of finalists

What?

Selection of the awarded proposals out of the final evaluation scores.

How?

According to the defined threshold since the preparation of the Open Call process, only proposals scoring 19 or more (out of 25) could be selected to be funded.

With the previous in mind, the ASSIST-IoT OC Committee must meet, carefully analyse the consensus reports and take the decisions based on the following criteria:

- Balance among pilots.
- Avoid (unless necessary) funding two projects tackling the same challenge.
- Analyse ethical/legal/operational concerns.
- Understand the most impactful projects for the sake of ASSIST-IoT.

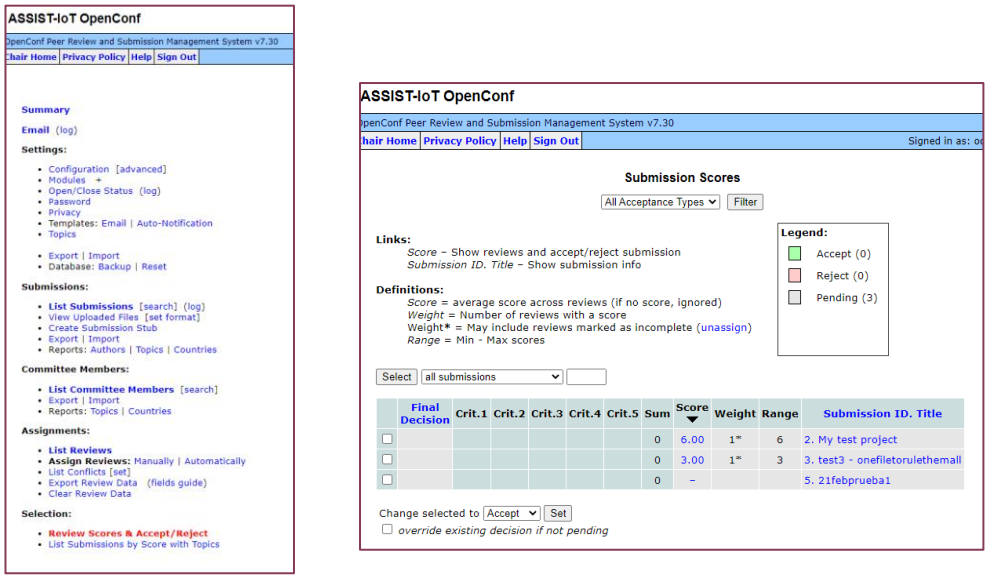


Figure 8. Acceptance or rejection in final ranking of proposals in OC software

By whom?

ASSIST-IoT OC Committee

For how long?

3 days

What are the results?

Via using the functionalities of the software illustrated in the previous images, the proposals are either selected for funding (*Accept*) or casted aside (*Reject*).

What comes next?

- Communication to the winners.
- Communication to all submitters.

3.4.7.Final acceptance and communication of results

What?

Communicate the results.

How?

One email will be sent to each Open Call proposer indicating whether the proposal has been accepted or rejected, attaching the ESR and the score.

By whom?

T2.6 leader (UPV)

For how long?

1 day

What comes next?

- Initiate procedures for starting the works:
    - Collaboration Agreement signature
    - Kick-off

4. First round of Open Calls (#1)

4.1. Timeline

The timeline that was followed in the first round of Open Calls was:

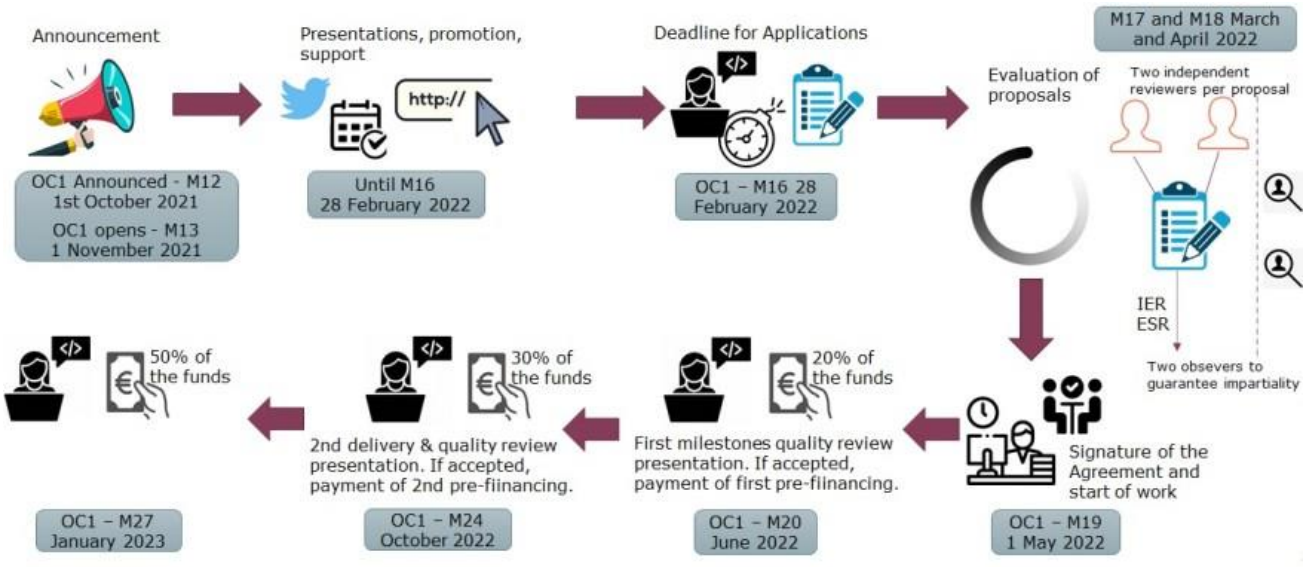


Figure 9. Timeline of Open Calls – Round #1

- **Announcement:** October 1st, 2021 ("the call will open on…").
- **Opening of the submission period**: November 1st, 2021
- **Close of the submission period:** February 28th, 2022
- **Evaluation:** March 1st, 2022 – April 22nd, 2022
- **Final decision and announcement to the winners**: May 19th, 2022
- **Start of projects**: June 1st, 2022
- **First milestone (M1):** June 30th, 2022
- **First review and pre-financing:** July 1st, 2022 – July 15th, 2022
  (The following has not been performed yet)
- **Second milestone (M6):** November 30th, 2022
- **Second review and mid-term payment:** December 1st, 2022 – December, 15th, 2022
- **Third milestone (M9):** February, 28th, 2023
- **Final review and payment of the balance:** March 1st, 2023 – March, 15th, 2023
-

4.2. Specific considerations

4.2.1. Project status

In this section, a short summary of the project status when the OC#1 closed and when OC#1 projects have started is indicated.

At the moment of finalising OC#1 submission deadline:

The deadline was 28th February 2022, the end of month M16 of the project. According to the proper reports, in that month in the project the status of each WP was the following:

- WP3
  - Finalising use-cases and requirements definition.
  - 2nd Iteration of architecture available.
- WP4
  - All enablers clarified, described and dev. ongoing.
  - Issues with components for delivering GWEN.
  - MVPs started to be demonstrated.
- WP5
  - All enablers clarified, described and dev. ongoing.
  - Security, DLT and FL scopes closed and ratified.
  - MVPs started to be demonstrated.
- WP6
  - Packaging (Helm charts) decided and tutorised.
  - Code in GitLab repos ongoing.
- WP7
  - Development and integration plans of all pilots closed, partners assigned, technical leader clarified.
  - Advancing at different speeds.
  - Eager to receive added value from external Open Callers.
- WP8
  - Just started M15 – First exercise of KPIs description on-going.
- WP9
  - Focus on technical reports and tele-dissemination
  - Scientific dissemination must be reinforced
  - Spin-in task force w.r.t B$ models created and already active.

Considering the previous, an enhanced summary of the pilots and enough technical indications about the architecture were prepared, enclosed in the Guide for Applicants and uploaded to ASSIST-IoT's website.

At the moment of starting the OC#1 projects, the status was as follows:

- WP3
  - BS, UC and requirements finalised.
  - Only final architecture version pending (D3.7)
- WP4 and WP5
  - All enablers well defined with final templates.
  - MVPs of all essential enablers.
  - Advancing at different speeds but on time.
  - Issues with components for delivering GWEN.
  - Repos of all enablers created in GitLab.
  - WP4 delivered a SW release to EC (WP5-twice).
- WP6
  - Packaging defined (summarising session tomorrow)
  - Development environment setup on-going.
  - DevOps flow with GitLab designed and put in place.
  - Readthedocs available with first doc. of enablers
- WP7
  - Development and integration plans of all pilots closed, advancing at different speeds and reported in D7.2.
  - Data flow and integration with ASSIST-IoT enablers current cornerstone – Plan and first advances witnessed
  - Will receive Open Callers' contributions from June 2022 on.
- WP8
  - D8.1 (plan) just delivered.
  - Presentation of tasks and actual kick-off tomorrow.
- WP9
  - Shifting to real events presence (IoTWeek) and actual papers beyond technical reports
  - Scientific dissemination results (29 conferences/events, 6 webinars)
  - Spin-in task force w.r.t B$ models on-going – 15 IEs defined

… which is allowing the OC#1 projects to start interacting with the technological provisions of ASSIST-IoT.

4.2.2.Challenges

Pilot 1: Port automation

Pilot 1 will be driven by the industrial partner and port terminal operator Terminal Link Group (TL) and will be deployed on its premises – in the Malta Freeport Terminal (MFLT). MFLT has experienced remarkable growth since its inception, and currently is one of the largest ports of transhipment in the Mediterranean region with

more than 2,000,000 containers/year. MFLT amalgamates activities of container handling and industrial storage, establishing as a critical node of European maritime logistics. Containers are managed by heavy machinery equipment like Rubber Tired Gantry cranes (RTGs), Rail Mounted Gantry Cranes (RMGs), or Ship-To-Shore Cranes (STSs). However, they always require the intervention of on-board operators and on-site clerks, who interact with each other by various means and signals, including information sources required to handle and deliver freight. The pilot aims to demonstrate the benefits of ASSIST-IoT executing several business scenarios to show how the developed technologies can transform complex industrial processes, infrastructure and equipment managed in the maritime industry.

This pilot is divided in three scenarios:

1. Tracking assets in terminal yard.
2. Automated CHE cooperation.
3. RTG remote control with AR support.

The open challenges that have been defined for Open Call applicants to tackle are depicted in the following table:

Code	*Name*	*Description*
P1C1	Low-cost accurate GPS development	Commercial D-GPS are too expensive (10k€), but they are really needed for several industrial assets. However, in principle, their cost can be fairly reduced (1k€) if regular GPS integrate within their hardware L5 lines, or by supporting near-real-time positioning post-processing signal techniques). Hence, a low-cost GPS device that can be leveraged at ASSIST-IoT edge nodes (especially in Port Automation pilot) and interact with ASSIST-IoT enablers should be developed (purchased + integration design + Proof of concept, integration from previous projects...) to empower the localization capabilities of cranes and vehicles inside the port.
P1C2	Data semantic translator	Managing large and time-consuming activities in enormous industrial areas, such as the port facilities, requires software and functionalities developed and supplied by vendors in different data types and architectures. The succesful integration of those systems requires self-capable data translators to enable interoperability among two or more systems. For example, in port infrastructures, the cranes telemetry data may be directly readable by the Terminal Operating Systems (TOS) –Navis N4- through a self-capable data translator, so that cranes can also be monitored by TOS in real-time.
P1C3	Annotation tool	The successful training of accurate machine learning classifiers capable to identify objects in complex environments requires huge amounts of annotated images. One of the bottlenecks to creating datasets that affect the overall training of the ML models is the time-consuming manual annotation processes. To overcome this challenge, automated software annotation tool (based on programmatic labelling) shall be developed to equip the image-based machine learning tasks by annotating and labelling images from video streams coming from port automation pilot (containers) and cohesive vehicle monitoring and diagnostics Pilot (vehicles).
P1C4	Stack collision prevention	Enhanced autonomous/remote RTGs via LIDAR/OCR/Computer vision: Stack collision prevention: Crane operator starts driving trolleys towards port terminal container stack. By means of embedded LIDAR/radar-sensors, the profile of the containers stack is measured, so that the crane computer vision system is able to, based on the profile stack, constantly calculate risk areas with current speed and direction in order to prevents collisions with other containers in all directions. To reduce the port accidents, a computer vision system capable to

		gather LIDAR data, understand the surrounding environment, calculate the risk and inform the crane operator about possible collision should be developed.
P1C5	Path optimising	Crane automatically calculates optimal path for hoist movement by making use of embedded LIDAR/radar-sensors. To support the crane operator, a computer vision system capable to gather LIDAR data, detect the trolley, calculate the hoist height and inform them about possible actions in order to align the crane with the trolley part will be of interest.
P1C6	People and vehicle detection	When a crane is operated remotely, the operator lacks of contextual information of its environment, and s/he has to rely on the video streams captured by the camera systems installed on the cranes. Although the project partners are working on a video analytics algorithm to detect containers, the system would eventually need to detect human beings or vehicles entering the working area of the crane, and alerts the operator about them. Hence, accurate video analytics algorithms of person or vehicle that can be leveraged at edge servers/devices will be of interest. The algorithms would identify person/vehicle, and send the analysed video to the Remote Operator desktop GUI highlighting the detected objects. This will at the end help remote operators to easily detect and monitor personnel and vehicles while operating the crane, increasing the operational safety at the terminal yard.
P1C#	IoT devices integration	Integration of new IoT devices to bring value to ASSIST-IoT pilot scenarios.
P1C*	Global	Others fitting within the global challenges descriptors

Pilot 2: Smart safety of workers

All the stakeholders involved in the procurement of small or large, private or public infrastructure works have a vested interest in maintaining a safe construction environment. Compliance with occupational safety and health regulations, and managing the related risk, at the construction site is of outmost priority to construction companies and the relevant administrative bodies, such as the European Agency for Safety and Health at Work (EU-OSHA). Accidents may happen in a matter of seconds without providing any early warnings. In addition, a potentially life-saving timely response to an accident may also not be possible unless adequate monitoring mechanisms are in place. The main objective of ASSIST-IoT in this application area is the prevention and near real-time detection of common OSH hazards such as stress, fatigue, overexposure to heat and UV radiation, slips, trips, falls from height, suspension trauma, immobility due to unconsciousness, collision (forceful impact) with heavy equipment, entrapment (unable to evacuate the worksite during an emergency) and improper use of PPE.

This pilot is divided in four scenarios:

1. Occupation safety and health monitoring
2. Fall arrest monitoring
3. Safe navigation
4. Health and safety inspection support

The open challenges that have been defined for Open Call applicants to tackle are depicted in the following table:

Code	*Name*	*Description*
P2C1	MR support for OSH training	During the training of the Health & Safety officer that happened on or outside of the construction areas, an xR application that inform them about the zones of the construction area or other information needed for training sessions will be of interest. Depending on the case, the open callers should develop an

		applications that support OSH training phase. This application should be integrated with the BIM model provided by the MOW in ifc format. Either AR application may be provided supporting the newcomer during the OSH training at the real construction site, or VR adaptable application enabling a virtual walk through the construction site indicating crucial from the OSH perspective areas. Together with the application at least of one hardware should be provided. For the purpose of VR application, scans of the construction site will not be available.
P2C2	Vision-based hazard monitoring	In the ASSIST-IoT, edge techniques are being developed to identify hazardous events from the worker's movement using IMU sensor, but the monitoring of them with vision-based techniques has not been investigate. For that reason, open callers could develop algorithms to recognize human-related events such as slips, falls etc. or hazardous ones such as explosion, fire etc. in video frames taken from the construction site. Another potential application to be considered for the vision-based system is verification of a use of required PPE (especially protective helmet and high visibility vest) by construction workers, subcontractors and visitors and in the case of irregularities - send notification to the OSH manager. Open Caller should provide both the hardware ensuring monitoring of at least four selected locations, as well as the software.
P2C3	2D/3D localization map user interface	One of the most critical enablers of ASSIST-IoT is the (geo)Localization enabler which is responsible to locate the human and assets inside the workplace. Taking advantage that the location data already exists, a localisation interface that can be part of ASSIST-IoT platform, may be developed by open callers to visualise the workers and assets on 2D/3D map based on related BIM. In addition, functionalities such as overcrowding detection and others could also be included in the localisation interface.
P2C4	Personal cooling system	Exposure to high ambient temperature together with a physical load that construction workers are exposed to, may lead to a significant thermal load and the heatstroke. Therefore, ASSIST-IoT will provide health and safety monitoring system that will identify eventual health issues and notify the OSH manager being at the construction site when there is a need to provide the first aid. However, in order to prevent such health threatening situations, workers at the most demanding working stands may be equipped with high-visibility protective clothing with integrated personal cooling system that adjusts its efficiency to individual preferences, worker's thermal load and environmental conditions. Such smart cooling clothing should be compatible with and take information from the ASSIST-IoT health and safety monitoring system, as well as the weather station. AI-based predictive capabilities of this solution will be additionally appreciated. The Open Caller should provide at least 5 pieces of the smart cooling clothing with relevant application.
P2C#	IoT devices integration	Integration of new IoT devices to bring value to ASSIST-IoT pilot scenarios.
P2C*	Global	Others fitting within the global challenges descriptors

Pilot 3: Cohesive vehicle monitoring and diagnostics

Most initiatives covering IoT deployment in vehicles fail to integrate information coming from different sources (e.g., business data, environmental data, data from within the vehicle, historical vehicle maintenance data) and in gaining access to vehicle data due to safety and security reasons. While real-time control of a moving vehicle raises safety concerns, and therefore precludes complete open access to the information and control firmware. There is no current application or deployment that integrates and presents vehicle information to a user in an interactive friendly environment depending on their role and relation to the vehicle. The implementation of the

ASSIST-IoT reference architecture in this pilot will enhance the capabilities of automotive OEMs to monitor the emission levels of vehicles which are already in operation (ISE, in-service emissions). Monitoring the fleet emission levels will allow the implementation of timely corrective actions, if needed, in order to restore them to the accepted limits. Ensuring fleet ISE meets the certification limits during their lifetime will imply a *de facto* fulfilment of the EU regulations, which are to be verified through in-service conformity (ISC) mechanism.

This pilot is divided in three scenarios:

1. Fleet in-service emission verification
2. Vehicle diagnostics
3. Vehicle exterior condition inspection and documentation

The open challenges that have been defined for Open Call applicants to tackle are depicted in the following table:

Code	*Name*	*Description*
P3C1	Integration of vibration sensors	Apart from the monitoring of the in-service emissions which has started to be developed by ASSIST-IoT, adding additional sensors on the vehicle increases its adaptability in unusual states. For instance, the integration of high-speed sensors on vehicle's ASSIST-IoT node shall provide data streams that can be used to track the state of the road and/or detect crashes (processing must be carried out at the edge), or adding additional diagnostic functions providing more insight in the ecosystem of ASSIST-IoT. Abnormal vibration patterns may trigger different actions, as reporting competent third parties about the road deficiencies, inform emergency services, or request vehicle servicing.
P3C2	Internal and external air quality monitoring.	Apart from the monitoring of the in-service emissions which has started to be developed by ASSIST-IoT, adding additional sensors on the vehicle increases its adaptability in unusual states. For instance, the integration of atmospheric sensors in vehicle's ASSIST-IoT node for monitoring air quality within the vehicle (e.g., for trucks in highly polluted environments as mining or chemical industries) and use those sensors for triggering protective actions for the driver (complex rule processing at the edge). Additionally, data may be used (for example in cities) for providing a real time mapping of the air quality in the city at the road level.
P3C3	Eco-driving and automotive navigation system as a service	ASSIST-IoT provides intelligent encapsulated digital enablers that can be used in different industrial solutions including automotive driving. To expand ASSIST-IoT platform capabilities, enablers that can be integrated with the current ecosystem and offer navigation and optimal routing planning will be of interest. Growing upon existing navigation systems, signals from the vehicle as the forecasted emission and fuel consumption may be used as inputs to the navigation systems of the open caller, providing fuel and emission optimal routes. The service may also be extended for fleet management.
P3C4	3D Image registration	The high resolution, colour scanner cameras have no common coordinate system. Additionally, it is a real technical challenge to apply auto-stitching approaches towards a complete vehicle view resulting of both subsequent images of one camera as well as images with overlay areas of different cameras. This is due to the short acquisition distance and the strongly 3D-shaped vehicle volumes. The large amount of acquired images poses on the other hand an ergonomic-challenge to display them to the end-user in a smart way. Reasonable (with respect to complexity / costs) camera registration

		methodologies or the additional use of affordable depth sensors could contribute to support either a true 3D-reconstruction or a appropriate displaying navigation approach of the high-resolution, colour images containing details of very small damages. The challenge consists in combining low cost 3D cameras & sensors with the very high quality 2D images (already available in the pilot) in real-time with enough accuracy to include in the ASSIST-IoT pilots. Open Call applicants are warned not to start from the scratch, but to build atop current solutions.
P3C5	Reflections- and shadows-noise removal on the scanned images of the vehicles	Problem: The typical scanner installation environments include multiple surrounding additional lighting, like parking lights, sun-rays arbitrarely coming and going during the day, etc. An efficient handling of the resulting noising reflections in the images (available in raw- or jpeg- format) improves the subsequent input to the AI-based surface examination procedures. The suggested solution will be adopted into the pipeline to expand ASSIST-IoT capabilities. Expected result: Running on the edge node, a singificant reduction of the reflections on the complex 3D vehicle exterior as well as better AI classification with respect to the damage classes. Increased overall AI-performance for the automated surface inspection.
P3C6	Image acquisition and processing from user-wear edge nodes	Problem: The vehicle images acquired by the scanner at a given moment (e.g., at the time visiting the garage) show only the current state and provide only images without any concrete user content. This is done by automated AI-based inspection. Allowing the provision of additional images and other relevant meta data, voluntarily generated by the end-users themselves or other relevant actors allows not only a better understanding of the vehicle exterior and a better AI-performance via redundancy and dedication but also provides timely changing information flow to document the vehicle status during the various business case steps. Expected is a trustful, secure transmission using the ASSSIT-IoT networking environment and the smooth merging of these additional images with the scanned ones together with an automated correspondence methodology for the mapping of the smartphone and the scanner images into a common base (ideally on 3D-vehicle coordinates). Expected output: Image acquisition and processing from user-wear edge-nodes (like smartphones), providing additional information supporting better image understanding of the vehicle exterior and timely updated recording of the current vehicle exterior status within the whole application business pipeline (prior or afterwards to the scan event).
P3C#	IoT devices integration	Integration of new IoT devices to bring value to ASSIST-IoT pilot scenarios.
P3C*	Global	Others fitting within the global challenges descriptors

4.3. Statistics

Here below there are indicated some statistics about the 1st iteration of Open Calls:

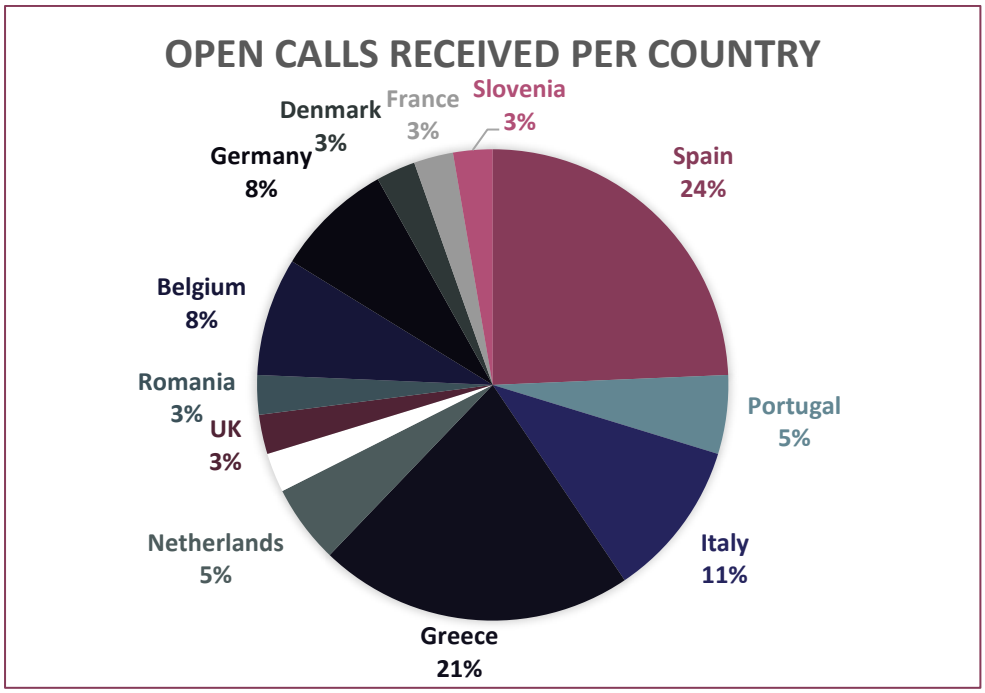
First, a reminder of some details about the OC#1 process:

- Opening date: 1 November 2021
- Closing date: 28 February 2022

- Funding available: 420.000 €
- Number of proposals to be funded: 7
- Budget per proposal (lump sum): 60.000€

In the next pages, some statistics about the received proposals and the results of the evaluation are given:

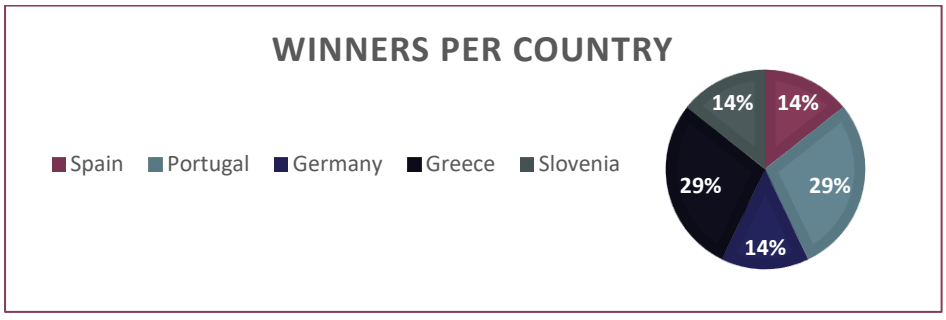
- Final number of proposals received: 37
- Final number of proposals surpassing the threshold (19 points out of 25): 15
- Provenance of total applicants (percentage and number per country):



Spain	9
Portugal	2
Italy	4
Greece	8
Netherlands	2
Austria	1
UK	1
Romania	1
Belgium	3
Germany	3
Denmark	1
France	1
Slovenia	1

Figure 10. OC#1 applications received per country

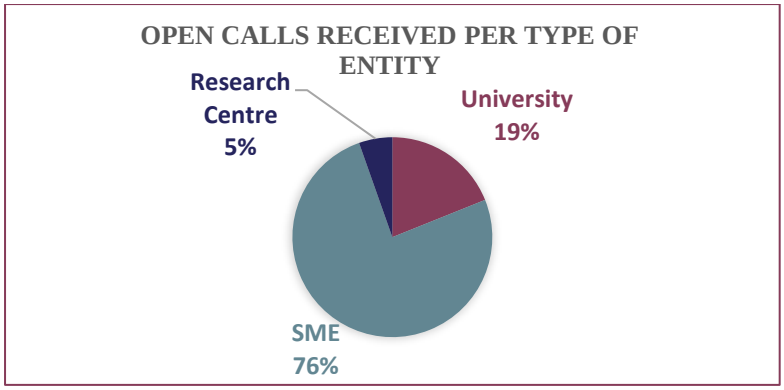
- Provenance of successful applicants (percentage and number per country)::



Spain	1
Portugal	2
Germany	1
Greece	2
Slovenia	1

Figure 11. OC#1 applications funded per country

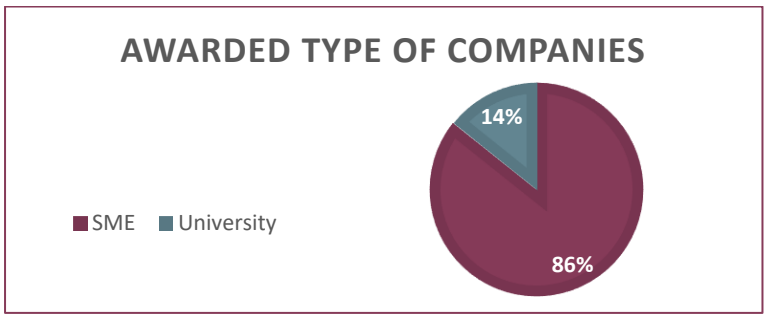
- Type of total applicants: SME, Corporate, Start-Up, University, RTO (percentage and number per type):



University	7
SME	28
Research Centre	2

Figure 12. OC#1 applications type of companies

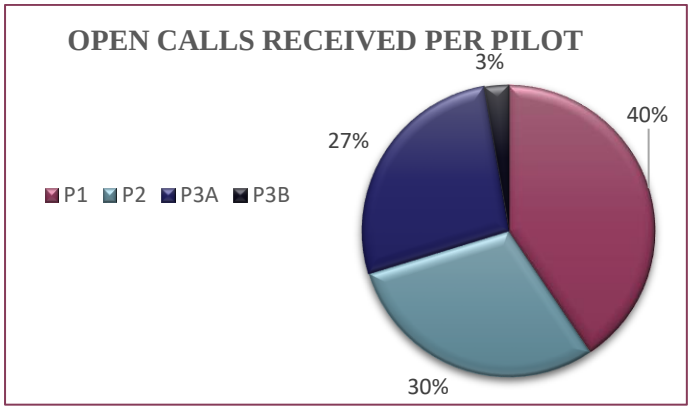
- Type of successful applicants: SME, Corporate, Start-Up, University, RTO (percentage and number per type):



University	1
SME	6

Figure 13. OC#1 awarded proposal type of companies

- Sector/Vertical of total applicants (percentage and number per sector/vertical):



P1 – Maritime port automation **(15)**

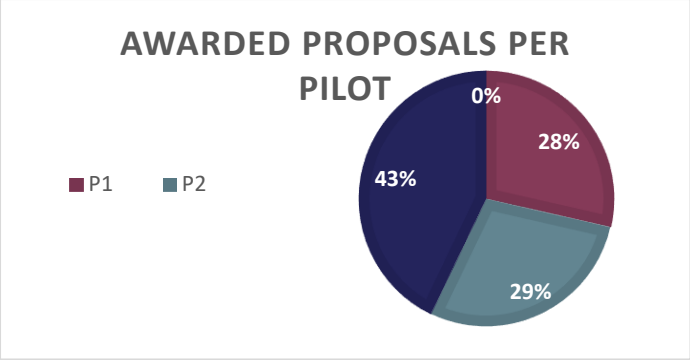
P2 – Smart safety of construction workers **(11)**

P3A – Automotive – Analysis of engine and driving parameters related to emissions **(10)**

P3B – Automotive – Inspection of surface defects in vehicles via image detection **(1)**

Figure 14. OC#1 applications per pilot

- Sector/Vertical of successful applicants (number per sector/vertical):



P1 – Maritime port automation **(2)**

P2 – Smart safety of construction workers **(2)**

P3A – Automotive – Analysis of engine and driving parameters related to emissions **(3)**

P3B – Automotive – Inspection of surface defects in vehicles via image detection **(0)**

Figure 15. OC#1 succsesful proposals per pilot

5. Awarded proposals

A total of 7 proposals have been awarded in the first round of ASSIST-IoT Financial Support to Third Parties.

5.1. ADDICTIVE

5.1.1. General details

The following are the general details of the project ADDICTIVE:

- ***Title of the project***: AI-Driven **Data Annotation** for Interactive Process and Situation Discovery
- ***Company***: Bytefabrik.AI GmbH (www.bytefabrik.ai)
- ***Type of company***: SME
- ***Country***: Germany
- ***Duration (in months)***: 8 months (Jun22-Jan23)

5.1.2. Technical details

- ***Abstract***: ADDICTIVE develops an innovative approach to reduce the effort needed for annotating large sets of time-series images. The annotation tool combines a preference elicitation approach with explainable AI and addresses data experts and domain experts
- ***Technologies***:
  - AI-driven data annotation in images based on self-learning preference-based analysis and absolute labels in neural networks
  - AI-guided annotation, No-Code AI development and Hybrid Embedding
  - Apache StreamPipes, Docker, K8s
- ***Architecture and other diagrams***:

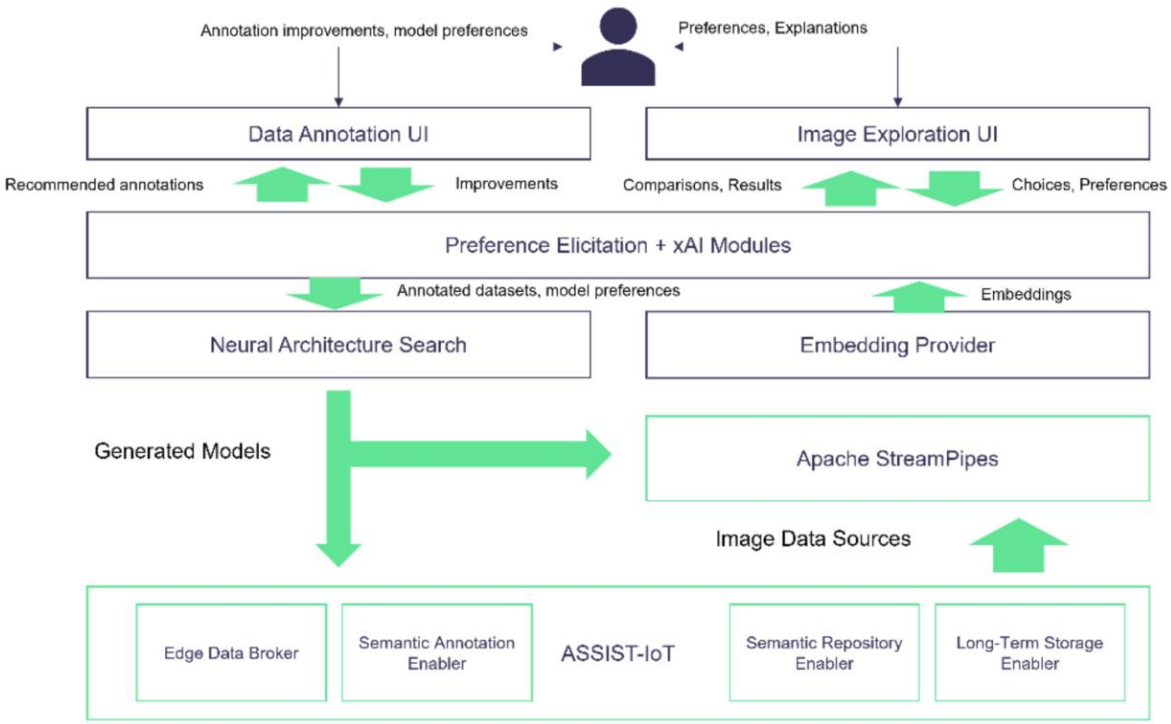


Figure 16. ADDICTIVE technical architecture

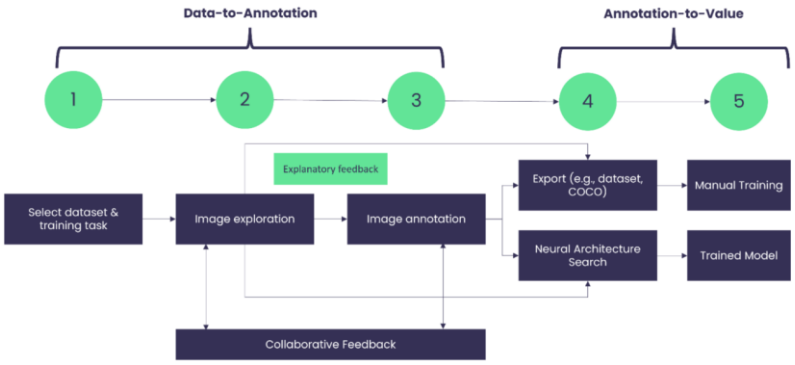


Figure 17. ADDICTIVE technical approach

5.1.3.Early report and prospect

By the date of the submission of this deliverable, ADDICTIVE has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for ADDICTIVE project:

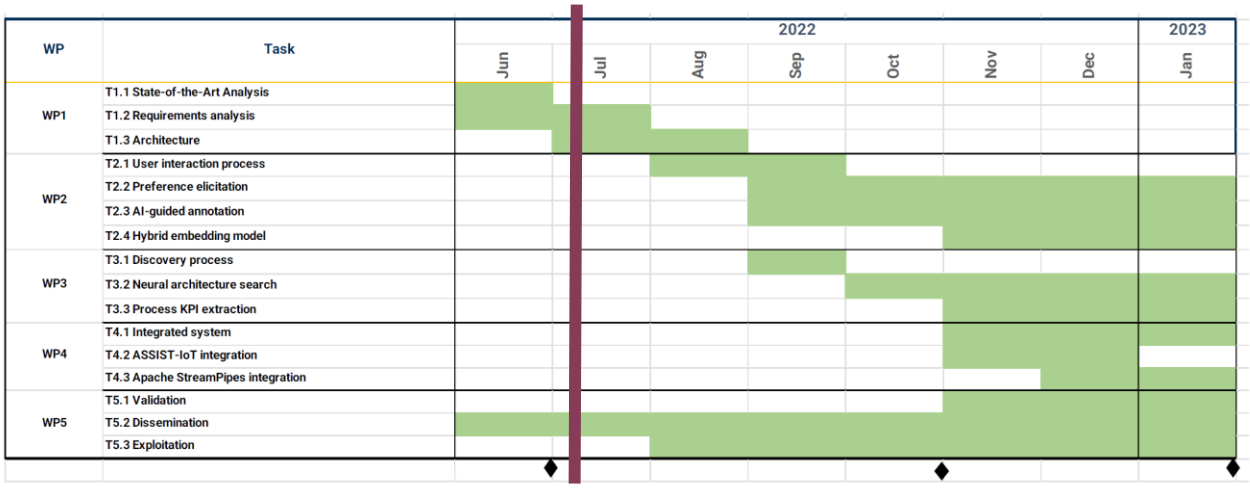


Figure 18. ADDICTIVE workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- First exchanges with the ASSIST-IoT partners related to the targeted use case, including access to datasets
- Definition of data sources to be supported (images and time-series data)
- Collection of the relevant state of the arts in terms of research and available software solutions
- Collection of functional requirements related to the targeted use cases
- Collection of technical requirements related to the target architecture
- Collection of business requirements and planned improvements to state-of-the-art solutions
- Conceptual design of the interaction process (data-to-annotation)
- Conceptual design of the training process (annotation-to-value)
- Presentation of the envisioned interactive learning approach at several fairs (EUROGUSS, Automatica) and events (FZI AI Day, VDMA Innovation Day).

5.2. SPINE

5.2.1.General details

The following are the general details of the project SPINE

- ***Title of the project***: Supply Ports with **Innovative CV edge Nodes** to increase their Efficiency
- ***Company***: Ubiwhere (www.ubiwhere.com)
- ***Type of company***: SME
- ***Country***: Portugal
- ***Duration (in months)***: 9 months (Jun22-Feb23)

5.2.2.Technical details

- ***Abstract***: SPINE will supply ports with **innovative computer vision technology, running at the edge**, to increase the efficiency and safety of their workers' operations. Ubiwhere, a software development SME from Portugal will demonstrate the Port Nervous System
- ***Technologies***:
  - Edge computing via an edge node equipped with NVIDIA Jetson Nano's video encoding and decoding performance
  - Video Augmentation with OpenCV and TensorFlow
- ***Architecture and other diagrams***:

Figure 19. SPINE architecture and planned devices

5.2.3.Early report and prospect

By the date of the submission of this deliverable, SPINE has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for SPINE project:

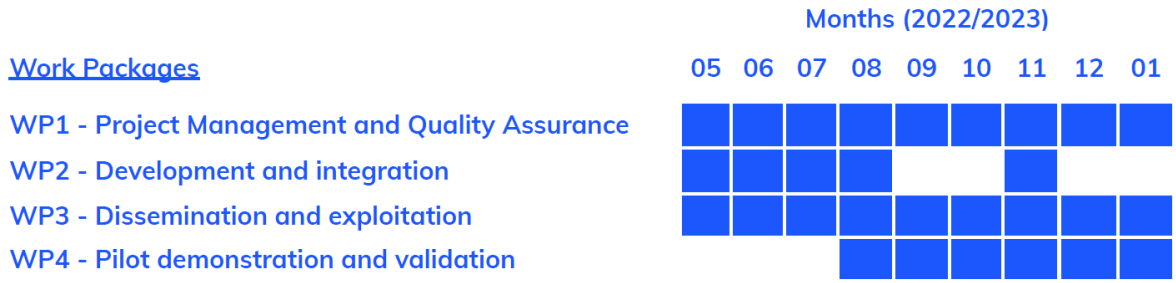


Figure 20. SPINE workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- Project management - planning future project activities, performing a risk analysis, establishing milestones, and getting to know all the people involved in the project (coordination with the ASSIST-IoT Consortium);
- Technical progress - technical meetings and product requirements gathering, definition of the team members to work on the project, create the initial draft of D2.1 (Updated SPINE Architecture).

5.3. ATHEMS

5.3.1.General details

The following are the general details of the project ADDICTIVE:

- ***Title of the project***: Active thermal load management system for PPE and workwear
- ***Company***: ComSensus, komunikacije in senzorika, d.o.o. (www.comsensus.eu)
- ***Type of company***: SME
- ***Country***: Slovenia
- ***Duration (in months)***: 9 months (Jun22-Feb23)

5.3.2.Technical details

- ***Abstract***: ATHEMS aims at **developing an active thermal load management system for PPE and other workwear**, supporting health and safety inspection at construction sites and/or other harsh working environments, preventing threatening situations that may lead to potential health issues for workers.
- ***Technologies***:
  - CompCooler cooling vest with placed flexible Peltier elements
  - Comsensus Liux-based eTag and IoT Gateway based on Yocto and Fledge
  - Environmental, bump and heart rate sensors, Docker, K8s

- ***Architecture and other diagrams***:

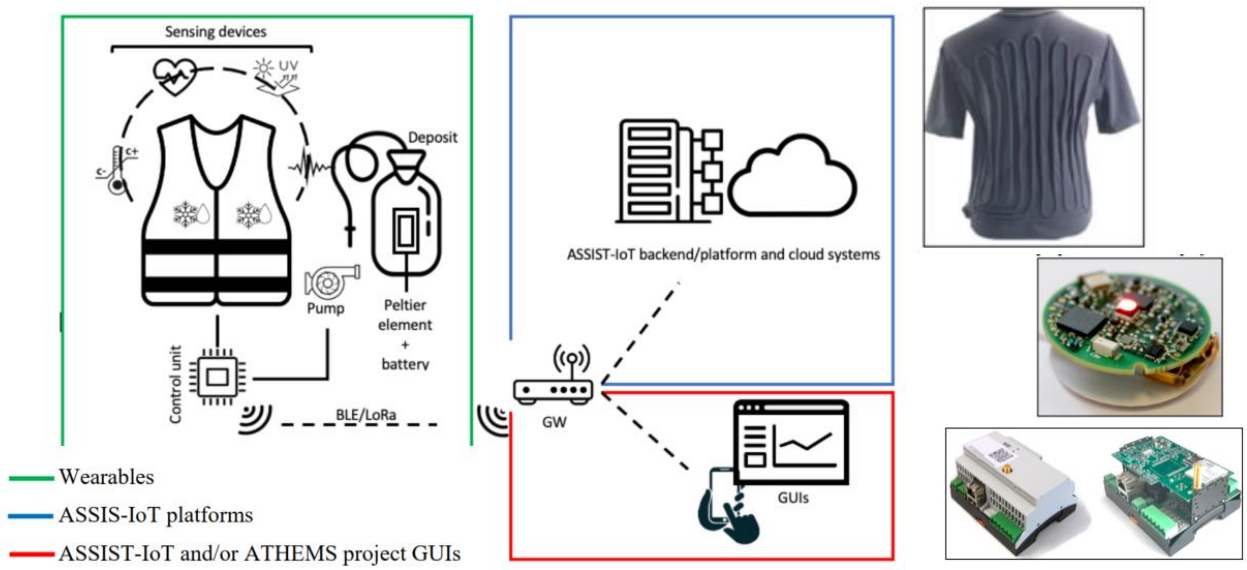


Figure 21. ATHEMS architecture, cooling vest design and planned devices

5.3.3.Early report and prospect

By the date of the submission of this deliverable, ATHEMS has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for ATHEMS project:

	M1	M2	M3	M4	M5	M6	M7	M8	M9
WP1 - Evaluation of requirements and assessment of available technologies	D1								
WP2 - Definition of use cases, key features, specifications, and requirements		D2							
WP3 - System architecture design (HW & SW design)			D3						
Processor and storage module									
System network interfaces: internet/cloud & sensor network communication modules									
Data acquisition and perception layer									
Communication, connectivity and control operation platform									
System security design: cloud, access and data transmission security									
WP4 - System development (HW & SW implementation)						D5			
Hardware modules implementation									
Embedded security framework development									
Data models: data acquisition, processing and analytics									
HMI services, data visualization and other high-level applications									
Network and communication services									
WP5 - System integration and production							D6		
Enclosure and packaging design									
Prototype production									
WP6 - System verification and validation					D4				
Identification of relevant standards and regulations									
Test cases description									
Unit testing									
System integration testing									
System testing									
User acceptance testing									
WP7 - Project and impact management									D7

Figure 22. ATHEMS workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- Confirmation from pilot owners that real-time and historical weather information from local weather stations will be available.
- Pilot owners granted access to necessary technical documentation of pilot available infrastructure.
- Preparation of internal document with the market available cooling solutions that better fit the developments needs for the project, attending to price, features and form factor.
- Progress on the development of the biometric measurement system o Adjustment of existing control unit for biometric sensing devices and development of basic mobile app mockup.
- Initial scouting of key stakeholders and potential customers through existing partnerships from the PPE domain

5.4. SMART SONIA

5.4.1. General details

The following are the general details of the project SMART SONIA:

- ***Title of the project***: SMART SONIA (occupational Safety mONitoring and Interventions for health
- ***Company***: DotSoft (www.dotsoft.gr)
- ***Type of company***: SME
- ***Country***: Slovenia
- ***Duration (in months)***: 9 months (Jun22-Feb23)

5.4.2. Technical details

- ***Abstract***: The project focuses in delivering an intervention based mobile platform for human workers in the construction industry, to monitor their level of attention, fatigue and possible distractions, thus preventing potential hazardous situations that can provoke injuries. The main objective of SMART SONIA is to uninstructively detect and predict the quality of health of the workers while at the construction field and notify the OSH manager about their ability to work without possible injuries.
- ***Technologies***:
  - KeyCloak, WSO2 API Management
  - Big Data, OSH considerations, Docker, K8s
  - Smart watches, environmental sensors and Smart beacons
- ***Architecture and other diagrams***:

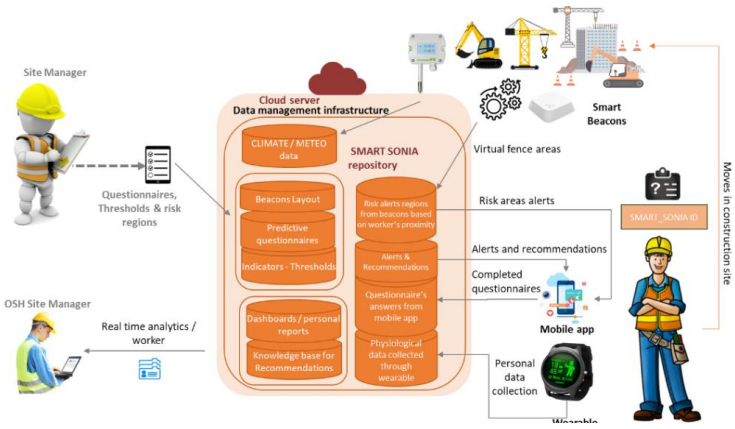


Figure 23. SMART SONIA planned solution

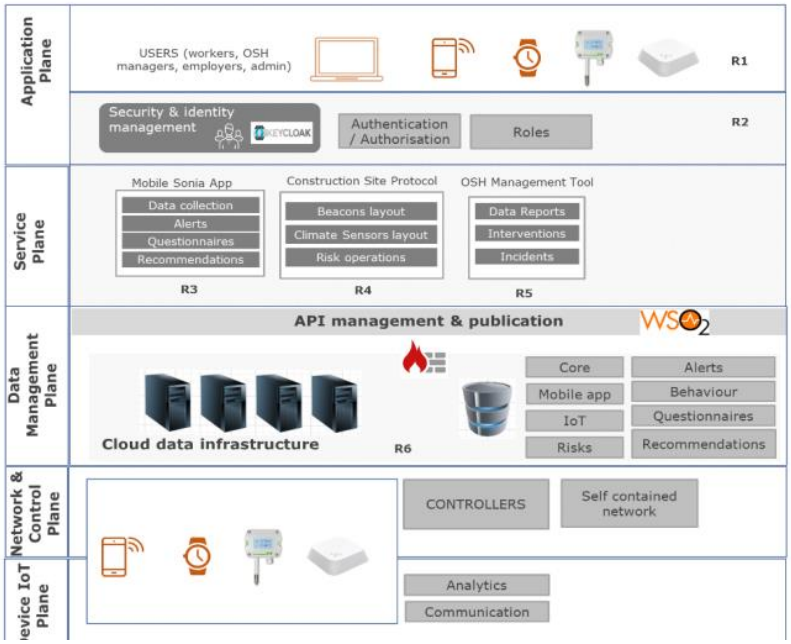


Figure 24. SMART SONIA architecture

5.4.3.Early report and prospect

By the date of the submission of this deliverable, SMART SONIA has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for SMART SONIA project:

TASK	DESCRIPTION	M1	M2	M3	M4	M5	M6	M7	M8	M9
WP1 PROJECT MANAGEMENT										
Task 1	Project Management									
Task 2	Technical and innovation management									
Task 3	QA and Risk Assessment									
Task 4	Ethics aspects management									
Task 5	Scientific co-ordination									
	D1: periodic Reports and Final Report	◆					◆			◆
WP2 DATA SOURCES MODELLING										
Task 1	Personal data modelling									
Task 2	Environmental IoT sensors data modelling									
Task 3	Smart beacons data modelling									
Task 4	Data collection from questionnaires									
Task 5	Ontological mapping									
Task 6	Repository conceptual design for personal data folder									
	D2: Extended mobile app data surces folder modelling					◆				
WP3 OSH POINT OF MANAGEMENT & SUPERVISION										
Task 1	Data modelling for risk site regional fences									
Task 2	Risk assessment of data collected									
Task 3	Library of notification and interventions									
Task 4	Ontological mapping									
	D3: Counselling strategy for lowering the likelihood of accidents					◆				
WP4 WORKER MOBILE APP										
Task 1	Mobile devices data collection									
Task 2	Data integration and enrichment									
Task 3	Data management infrastructure implementation and deployment									
Task 4	Testing and quality assurance									
	D4: Mobile app								◆	
WP5 OSH point of management & supervision										
Task 1	Workflow design									
Task 2	Data analytics & dashboards									
Task 3	Pilot integration and setup									
Task 4	Testing and quality assurance									
	D5: Tablet app								◆	
WP6 PILOT TRIAL										
Task 1	Setup of infrastructure									
Task 2	Training of stakeholders									
Task 3	Pilot trial									
Task 4	Testing and quality assurance									
	D6: Pilot Report									◆
WP7 Communication, dissemination and exploitation (CDE)										
Task 1	CDE Plan									
Task 2	CDE Materials									
Task 3	Project web site									
Task 4	CDE Implementation									
	D7: CDE Report									◆

Figure 25. SMART SONIA workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- Study of the use cases already developed for Pilot #2 from the overall ASSIST-IoT Project
- Introduction with the Pilot case involved stakeholders
- Refinement of the business case requirements and the impact on the devices and infrastructure that will be purchased and deployed within the pilot case environment
- Study of the linkage between the SMART-SONIA infrastructure and the ASSIST-IoT data infrastructure.

As a result of the above tasks, the following actions are in progress:

- Refinement of the sensor devices that will be purchased in the scope of the project (equipment)
- Final tuning of the budget for the project equipment
- Drafting of the specific functional and non-functional requirements for the overall SMART-SONIA solution: o User roles
- User stories
- Use case models
- Functional Requirements
- MOSCOW technique prioritization of requirements
- Drafting of initial mockups for the: a) worker's mobile app, b) the OSH manager's tablet application, and c) the office dashboards / real time insights.

5.5. BREATHE

5.5.1. General details

The following are the general details of the project BREATHE:

- ***Title of the project***: Breaking through Air Pollution with Thinking Vehicles at the Network Edge
- ***Company***: Universidad Politécnica de Cartagena (https://upct.es)
- ***Type of company***: University
- ***Country***: Spain
- ***Duration (in months)***: 9 months (Jun22-Feb23)

5.5.2. Technical details

- ***Abstract***: BREATHE proposes an **in-cabin and crowdsensing air pollution monitoring system** to gather and intelligently process data **in a multi-tier edge computing platform**, to assure healthy conditions when traveling, driving and operating vehicles, and to analyze air quality in cities.
- ***Technologies***:
  - LP-WAN, LoraWAN
  - $PM_{2,5}$, PM_{10}, CO, CO_2, NO_2, SO_2 and O_3 and crowdsensing monitoring
  - Docker, K8s, Helm charts

- ***Architecture and other diagrams***:

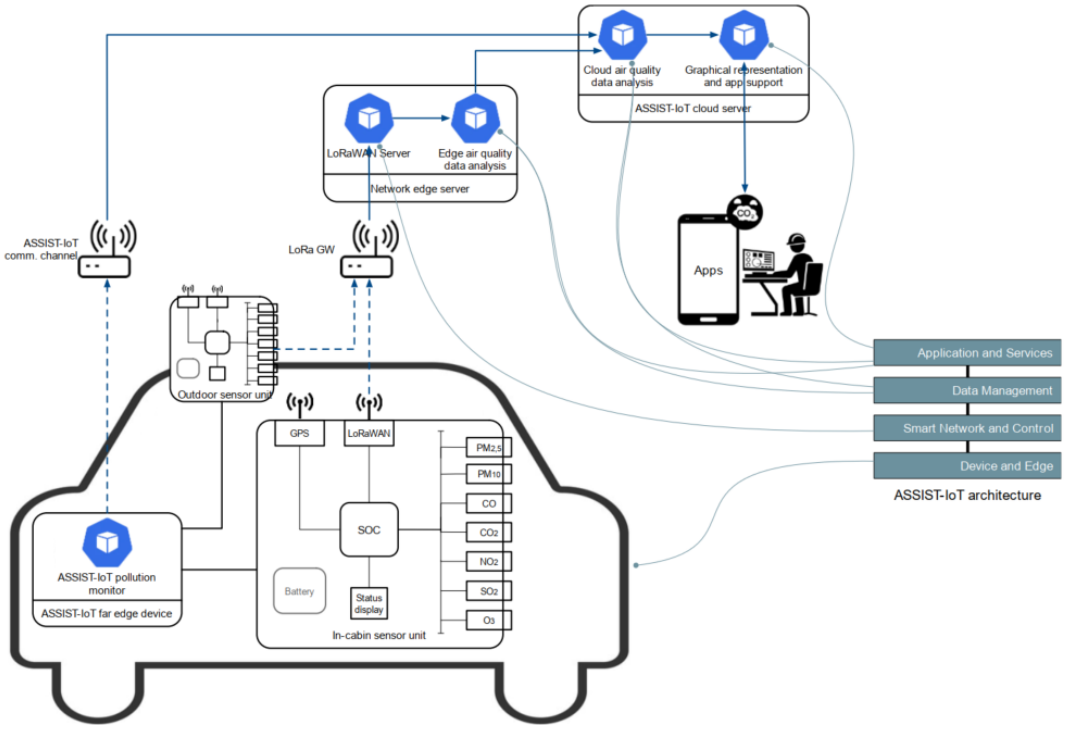


Figure 26. BREATHE planned architecture

5.5.3.Early report and prospect

By the date of the submission of this deliverable, BREATHE has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for BREATHE project:

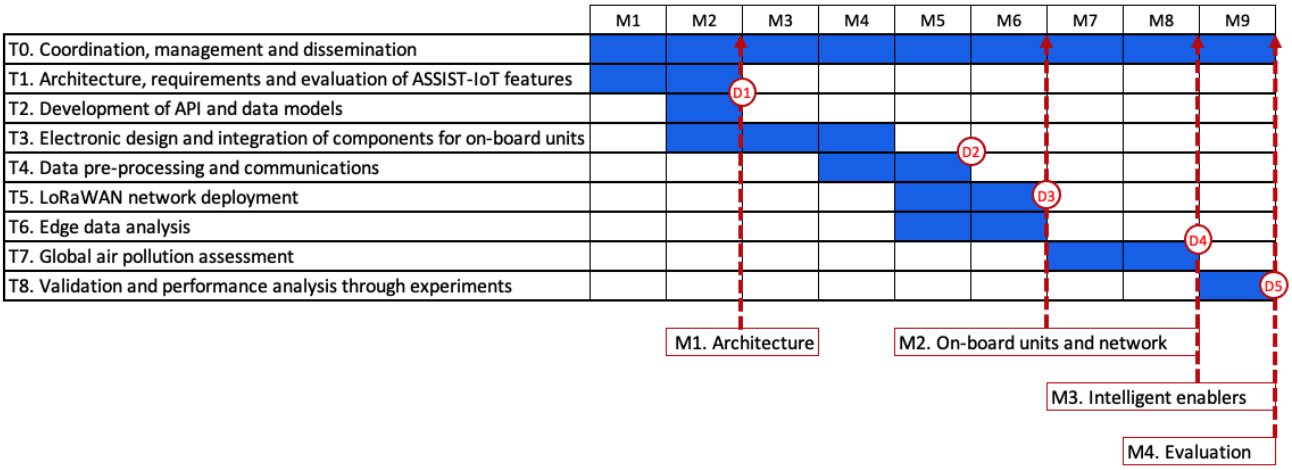


Figure 27. BREATHE workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- The design of the different architectural components of the solution is advancing correctly. The main components of the on-board units for indoor and outdoor pollution monitoring have been identified, together with the software nodes to be installed on the infrastructure. Main advances are on the design of the on-board units, given that electronics components must be orderer as soon as possible.

- Setting-up the testing environment. Progressing in the idea of replicating the vehicle scenario in the lab, with the aim to achieve a development and integration framework in which to progress prior real testing in the reference vehicle. Acquisition of a WiFi router and maintained conversations with UPV about the network addressing and configuration. Also, initial ideas for communicating the two on-board units with the ASSIST-IoT node installed in the vehicle have been exchanged.
- Acquiring equipment for developing the on-board units. Identification of key components that will be necessary for assembling the two prototypes, given the expected delivery delays due to the worldwide crisis of electronics components. New sensors have been purchased for atmospheric and climatic measurements, due to the shortage of the units used in the past by the group.
- Communication effort. A new web page for the project is being developed and will be announced with it is ready.
- UPCT has assisted two meetings within the ASSIST-IoT project coordinators. The first one at the beginning of M1, in order to present the main concept and the planned objectives, and a second one at the end of M1, focused on reporting the advances and receiving information about how to proceed with reports and payments

5.6. HAIR

5.6.1. General details

The following are the general details of the project HAIR:

- ***Title of the project***: Hyper-local air quality mapping and intelligent Low Emission Zones powered by ASSIST-IoT architecture
- ***Company***: Allbesmart, LDA (www.allbesmart.pt)
- ***Type of company***: SME
- ***Country***: Portugal
- ***Duration (in months)***: 9 months (Jun22-Feb23)

5.6.2. Technical details

- ***Abstract***: The HAIR project will implement and test **two new use cases** "hyper-local air quality mapping" and "intelligent management of Low Emission Zones" in the context of pilot P3A. These use cases have great market potential in the smart cities' domain, ensuring wide and sustainable use of ASSIST-IoT deployed solutions
- ***Technologies***:
    - Pollution Resource Management (PRM) in own air quality management station at the edge
    - National Instruments CompactRIO system (NI cRIO) modules, Docker, K8s
    - ETSI 103 496 - C-ITS support for transport pollution management applications

- ***Architecture and other diagrams***:

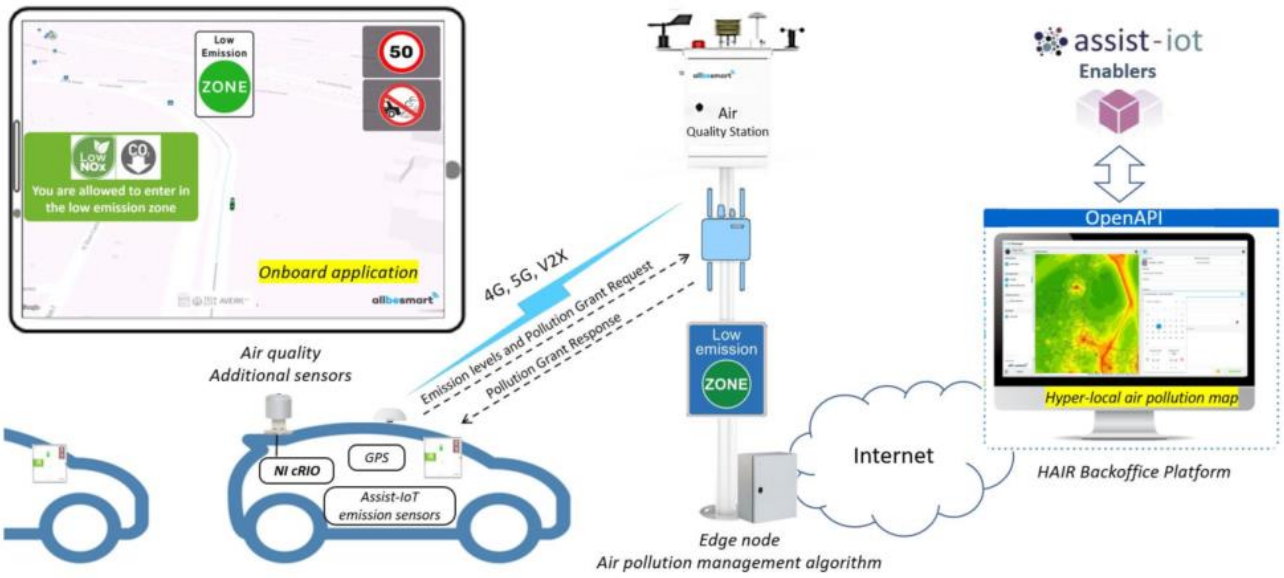


Figure 29. HAIR designed solution

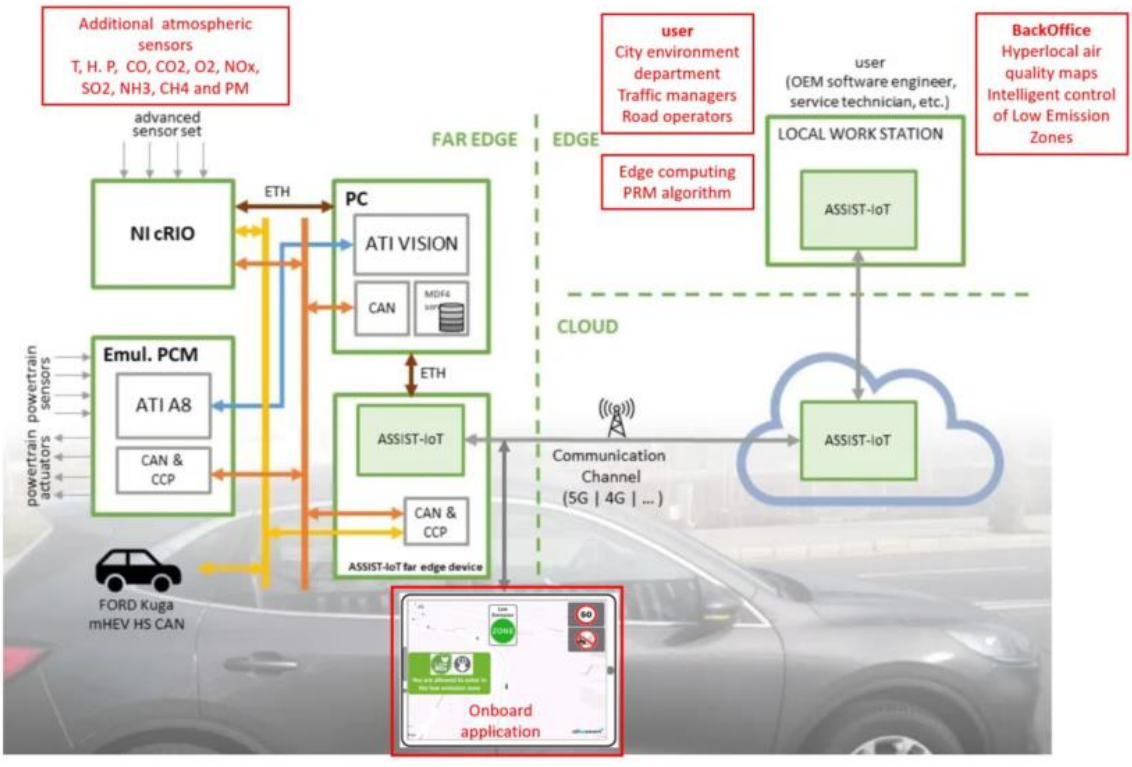


Figure 28. HAIR planned architecture

5.6.3.Early report and prospect

By the date of the submission of this deliverable, HAIR has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for HAIR project:

Task	Month 1	2	3	4	5	6	7	8	9
Task 1: Definition of HAIR use cases and system requirements									
Task 2: Selection of the ASSIS-IoT enablers									
Task 3: Implementation of the Onboard and Backoffice applications									
Task 4 Implementation of the Pollution Resource Management (PRM) algorithm									
Task 5: Integration and interoperability tests									
Task 6: Pilot demonstration									
Task 7: Dissemination									

Figure 30. HAIR workplan (M1 execution)

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

- Definition of the HAIR system architecture o ASSIST-IoT follows a microservice architecture to allow the inclusion of small applications (called enablers) that are each responsible for executing one function and to let each microservice be autonomous, independent, and self-contained. o The HAIR architecture will follow the design principles that govern ASSIST-IoT architecture and solutions, namely (i) the use of microservices, (ii) their instantiation in containers, (iii) their grouping into “enablers”, (iv) and their further orchestration using Kubernetes technology.
- Extra additional atmospheric sensors o The purchase process of the additional atmospheric sensors for the ASSIST-IoT test vehicle node was initiated. The HAIR project will add several external atmospheric sensors in the P3 test vehicle: Temperature, Humidity, Pressure, CO, CO2, O2, NOx, SO2, NH3, CH4 and particle size (PM). The Smart Environment PRO kit from Libelium was selected.
- Air quality stations in Valencia o Initial tests were done with data from the air quality stations provided by the European Environment Agency (EEA) for the city of Valencia. The portal uses an API to fetch the environmental data that is displayed on the map interface, and has support for the pollutants PM2.5, PM10, NO2, O3, SO2, CO. With this data, we can calculate the pollutant index and then calculate the Air Quality Index which will be used to feed the PRM algorithm.
- Dissemination activities: The HAIR project was presented in a Workshop about smart cities and climate change adaptation.

5.7. RAZOR

5.7.1.General details

The following are the general details of the project RAZOR:

- ***Title of the project***: Road hAZard detectOR
- ***Company***: INSIGHIO P.C. (https://insigh.io)
- ***Type of company***: SME
- ***Country***: Greece

- ***Duration (in months)***: 9 months (Jun22-Feb23) (proposal 8 months – agreed to 9 months during CA signature).

5.7.2.Technical details

- ***Abstract***: RAZOR will develop a scalable **IoT application that can automatically detect road hazards in real time**. The outcome of the project will be a dynamic and active vehicle safety system, deployed over the ASSIST-IoT architecture, which will automatically monitor road network conditions, contributing to a significant reduction of accidents and vehicle damages. The system is built upon the proposer's own IoT technology and portfolio. In particular, it will be based on a **custom in-vehicle IoT board and a containerized backend software infrastructure**, towards timely alerting the involved stakeholders.
- ***Technologies***:
  - Big Data decision platform
  - A "thing" IoT hardware board consisting in a complex in-vehicle station with several sensors (including accelerometer, environmental and others) using MQTT, CoaP and LoRa, Docker, K8s,
  - Deep Learning Networks to estimate road hazards; vehicle abnormality requiring inspection; detect incident; correlate road conditions with fuel consumption (if available), etc
- ***Architecture and other diagrams***:

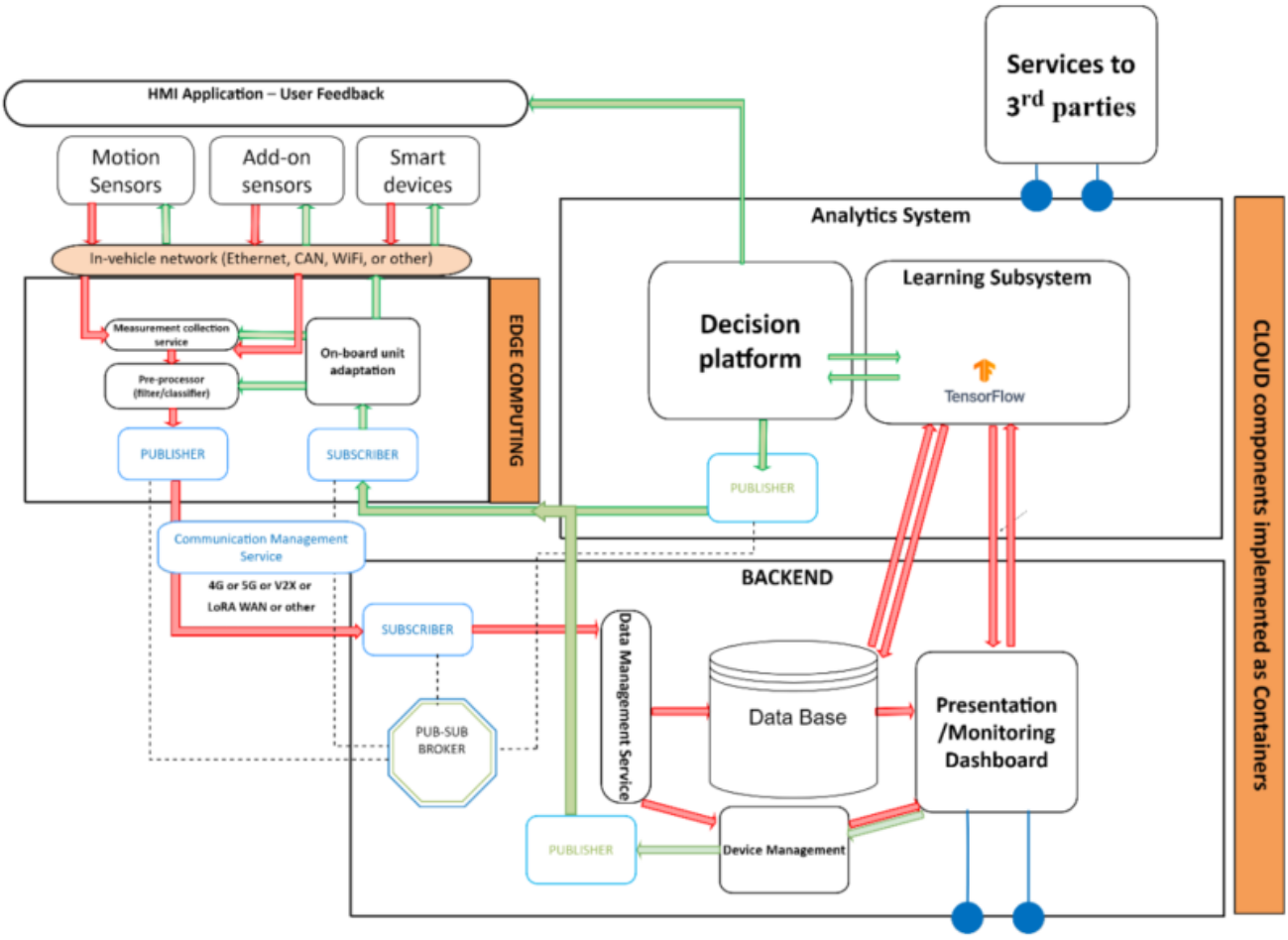


Figure 31. RAZOR planned architecture

Figure 3: insigh.io devices

Figure 4: insigh.io platform

Figure 32. RAZOR devices and tentative visualization

5.7.3.Early report and prospect

By the date of the submission of this deliverable, RAZOR has completed the report of their first month of execution.

The whole work plan and the current timespot is identified for RAZOR project:

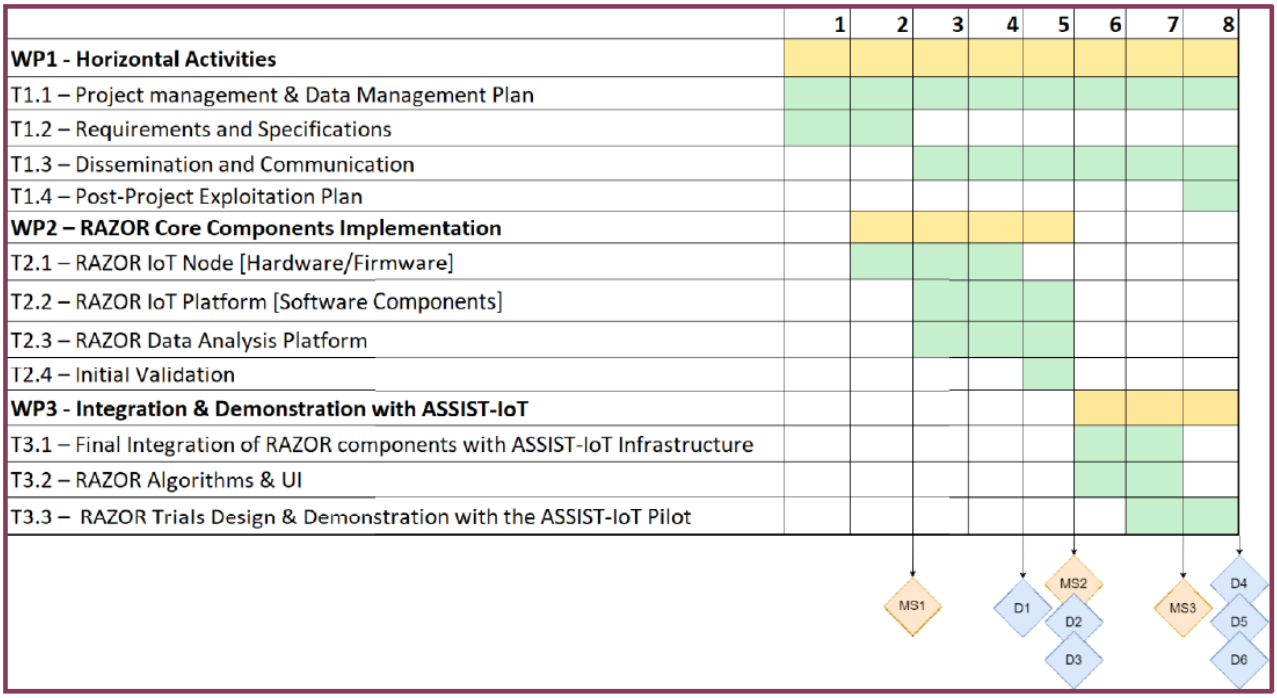


Figure 33.RAZOR workplan (M1 execution)

During the contracting phase, it was agreed that the duration will be extended by 1 month, hence the project closure will shift to M9 (February 2023). This extension will impact only WP3 duration. During the current reporting period (RPI1), running from T0-M1, the activities of WP1, and in particular Tasks 1.1 and 1.2, commenced as planned. These tasks will be completed, by the end of M9 and M2 respectively.

So far, the planning is being met, thus **the request for pre-financing was approved.** Remarkable actions have been:

In the specific reporting period (T0-M1) the focus was on the familiarization with the ASSIST-IoT framework and making the first preparatory steps towards commencing the core technical developments. In particular:

- Study and thorough analysis of pilot 3a "Cohesive vehicle monitoring and diagnostics", which will be used for deploying our road detection anomaly system.
- With the help of the Pilot host, InsighIO was able to design the system architecture of the envisioned IoT solution, and identify potential paths for integration with the ASSIST-IoT architecture, regarding both the hardware and the software.
- In parallel, start drafting the technical requirement of the dedicated IoT hardware board that will be developed for real-time sensing of road conditions, and will eventually be interconnected with the ASSIST-IoT framework.
- An initial list of candidate motion sensors has been prepared, and will be the basis for finalizing the hardware design in the next 3 months.
- In terms of other, non-technical activities, compilation of a first list of possible project communication, dissemination and networking activities that we may consider during the project execution.

Overall, no deviation from the original plan has been observed during the current reporting period, and RAZOR is on track for fulfilling the 1st project milestone expected by the next month (M2 – July 2022).

6. Conclusions and lessons learnt towards the next round

The first round of evaluation of Open Calls of ASSIST-IoT has concluded satisfactorily. 37 proposals were received, well balanced between countries and entity types. Out of those, 7 were considered to be awarded, that have now become actual projects that have finalised successfully their first reporting period. Evaluators and observers provided good feedback of the process, including the indication by the latter that no incidence nor inconvenience were detected.

With regards to the lessons learnt towards the 2nd iteration, below are some hints that are already being followed by the T2.6 team:

- Not to be very narrow in the description of the challenges, as this prevented some organisations from submitting interesting proposals.
- Provide better (more elaborated) information about technology used in ASSIST-IoT, specially the requirements and considerations of the architecture (OpenAPI, Helm Charts, k8s/k3s, encapsulation, hardware, processor…).
- Conduct more webinars and start with them earlier.
- Better define the technical and operational criteria for proposers and also for evaluators
- Contact with evaluators earlier. Here, a suggestion received has been to keep the same evaluators as in the first round, provided that no conflicts of interest appear.
- Elaborate a more agile procedure for administratively ensuring the participation of the evaluators (agility in contract signature, easier access to the system…).
- Better specify that the amount is fixed (lump sum) and of 60k€ to avoid submissions with different budget amounts.
- Improve the description of the whole pilots and project on ASSIST-IoT's website.

All of the previous is being considered currently.

Appendix A - Structure of the Proposal Template

This project has received funding from the European's Union Horizon 2020 research innovation programme under Grant Agreement No. 957258

Proposal Template for ASSIST-IoT Open Call application

1. Administrative Information (Registration form)

PART - I	Name of the submitter	
	Email address of submitter	
	Country	
	Organisation	
	Type of organisation	
	PIC of organisation	
	Website of the organisation	

PART - II	Title of the project	
	Acronym of the project	
	Pilot which is addressed to	
	Challenge within pilot	

This page is not considered for the 15-pages limit.

	Abstract (250 chars)	
	Keywords	

PART - III	Project duration (months)	
	Budget for the project	

2. Idea

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- Main idea of the project and how it is related with the specific challenge of the selected pilot.
- Innovation (how the project goes beyond already existing solutions)
- Technology underlying the project, providing enough block diagrams and illustrative pictures to understand the process and how it will work interacting with ASSIST-IoT.
- Observable and tangible results (application, GUI, software, hardware, protocol, methodology).
- Background of the solution (where it comes from, software it builds atop, etc.).

  * Here, it is worth mentioning that software development and hardware/firmware integration will need to be compliant with ASSIST-IoT Architectural guidelines (mainly relevant: enablers encapsulation, containerisation/virtualisation and OpenAPI). Please, consult in detail the ¡Error! No se encuentra el origen de la referencia.¡Error! No se encuentra el origen de la referencia. of the Guide for Applicants in the Application Package.

Maximum length of this section: **5 pages.**

3. Relevance to ASSIST-IoT

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- Describe how the idea matches ASSIST-IoT overarching goals (https://assist-iot.eu/objectives/)
- Describe how the solution will contribute to enhance the scope of the selected pilot? (https://assist-iot.eu/use-cases)
- Describe how it will enhance (and which part of) the architecture of ASSIST-IoT.

Maximum length of this section: **1 page.**

4. Impact and sustainability

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- Which is the expected impact of the solution during ASSIST-IoT project?

- Which are the mid- and long- term indicators that could be monitored to measure the impact of your solution? Attempt to quantify such estimated impact.
- How will you ensure the sustainability of the work beyond the end of the funding? Please indicate any additional sources of funding/support you may need and how you plan to secure it
- Explain every expected publication (scientific paper, congress article, etc.).
- Standardisation and roll-out potential

Maximum length of this section: **2 pages.**

5. Implementation

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- Gantt of the project (Note that the max. duration for OC#1 is 9 months)
- Explanation of the work plan (divided in tasks) as detailed as possible.
- Describe the necessary means to realise the idea (data, equipment, connectivity, access to infrastructure, systems, etc.).
- Milestones (max.4) and deliverables (max. 8 including reports and other – e.g., software).

  * Here, it is worth mentioning that deliverables and milestones should be aligned with the planned "payment milestones", which for the first round of Open Calls are: (a) Intermediate payment (M24- October, 31st 2022) and (b) Final payment (M27 – January, 31st, 2023).

Maximum length of this section: **4 pages.**

6. Team

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- List the relevant members of your team, indicating gender (voluntarily), their relevant skills and experience.
- Indicate the structure of the team and the roles and responsibilities that each member will be taking.
- Experience of the organisation (relevant previous projects, services, contracts, etc.).

Maximum length of this section: **2 pages.**

7. Other relevant aspects

[Delete this guidance box in your submitted version]

This section must cover (at least, but not limited to) the following points:

- Which (if any) data do you intend to gather or produce? How much of this will be openly available?
- Do you rely on personal data? If so, how will you store this data? All pilots will be expected to comply with the General Data Protection Regulation 2016/679 (GDPR).
- Mention any IPR background existing.

Maximum length of this section: **1 page.**

Appendix B - Evaluation Form

Review

Criterion 1 - Relevance to ASSIST-IoT - Idea and relevance:

- 0 = Not meeting any appropriacy criteria or not related to the expected scope
- 1 = Related to the topic but insufficient to be considered a proper content
- 2 = Appropriate content but insufficient to be considered relevant for the goal of the Open Call
- 3 = Solid content that could fit the goal of the section
- 4 = Relevant content that could be considered a good addition to the project
- 5 = Excellent content that should be considered a clear candidate to be be funded

Justification of Criterion 1 score:

Justification is mandatory. At least 200 words of explanation must be included reflecting on the score given to this criterion.

Criterion 2 - Impact and Sustainability:

- 0 = Not meeting any appropriacy criteria or not related to the expected scope
- 1 = Related to the topic but insufficient to be considered a proper content
- 2 = Appropriate content but insufficient to be considered relevant for the goal of the Open Call
- 3 = Solid content that could fit the goal of the section
- 4 = Relevant content that could be considered a good addition to the project
- 5 = Excellent content that should be considered a clear candidate to be be funded

Justification of Criterion 2 score:

Justification is mandatory. At least 200 words of explanation must be included reflecting on the score given to this criterion.

Criterion 3 - Technical Excellence:

- 0 = Not meeting any appropriacy criteria or not related to the expected scope
- 1 = Related to the topic but insufficient to be considered a proper content
- 2 = Appropriate content but insufficient to be considered relevant for the goal of the Open Call
- 3 = Solid content that could fit the goal of the section
- 4 = Relevant content that could be considered a good addition to the project
- 5 = Excellent content that should be considered a clear candidate to be be funded

Justification of Criterion 3 score:

Justification is mandatory. At least 200 words of explanation must be included reflecting on the score given to this criterion.

Criterion 4 - Quality of implementation:

- 0 = Not meeting any appropriacy criteria or not related to the expected scope
- 1 = Related to the topic but insufficient to be considered a proper content
- 2 = Appropriate content but insufficient to be considered relevant for the goal of the Open Call
- 3 = Solid content that could fit the goal of the section
- 4 = Relevant content that could be considered a good addition to the project
- 5 = Excellent content that should be considered a clear candidate to be be funded

Justification of Criterion 4 score:

Justification is mandatory. At least 200 words of explanation must be included reflecting on the score given to this criterion.

Criterion 5 - Quality of the team:

- ○ 0 = Not meeting any appropriacy criteria or not related to the expected scope
- ○ 1 = Related to the topic but insufficient to be considered a proper content
- ○ 2 = Appropriate content but insufficient to be considered relevant for the goal of the Open Call
- ○ 3 = Solid content that could fit the goal of the section
- ○ 4 = Relevant content that could be considered a good addition to the project
- ○ 5 = Excellent content that should be considered a clear candidate to be be funded

Justification of Criterion 5 score:

Justification is mandatory. At least 200 words of explanation must be included reflecting on the score given to this criterion.

Recommendation:

- ○ Reject: Content inappropriate to the Open Call
- ○ Probable Reject: Evident flaws in content or form or very poorly written
- ○ Marginal Tend to Reject: Not as badly flawed; major effort necessary to make a consistent candidate for the Open Call
- ○ Marginal Tend to Accept: Content could be accepted, but it lacks more accuracy, relevance, impact or quality to be considered really relevant
- ○ Clear Accept: Content, form, impact, quality of the proposal and ideas meet required criteria, but it lacks exact/perfect fit to be considered excellent
- ○ Must Accept: Clear candidate to be funded

Which of the following challenge(s) would be the most appropriate for this submission?:

This is interesting to realise whether the applicant and the reviewer have the same impression over the challenge that should have been selected)

- ☐ Low-cost accurate GPS development
- ☐ Data semantic translator
- ☐ Annotation too
- ☐ Stack collision prevention
- ☐ Path optimising
- ☐ People and vehicle detection
- ☐ IoT devices integration
- ☐ Global
- ☐ MR support for OSH training
- ☐ Vision-based hazard monitoring
- ☐ 2D/3D localization map user interface
- ☐ Personal cooling system
- ☐ IoT devices integration
- ☐ Global
- ☐ Integration of vibration sensors
- ☐ Internal and external air quality monitoring
- ☐ Eco-driving and automotive navigation system as a service
- ☐ 3D Image registration
- ☐ Reflections- and shadowsnoise removal on the scanned images of the vehicles
- ☐ Image acquisition and processing from user-wear edge nodes
- ☐ IoT devices integration
- ☐ Global

Comments for the ASSIST-IoT Panel (applicants will not see these comments):

Reasons must be included for all submissions, because they help us determine what to do in case of ties.